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ABSTRACT

This volume contains an index to volumes 18-38 (1974-1994) of the "Work Papers of the Summer Institute of Linguistics" (Stephen A. Marlett and J. Albert Bickford) as well as the following 1995 papers: "Laryngeal Licensing and Syllable Well-formedness in Quiengolani Zapotec" (Cherly A. Black); "A Grammar Sketch of the Kaki Ae Language" (John M. Clifton); "Pronouns in Mexican Sign Language" (Marilyn Plumlee); and "Madija Predicates" (Pamela S. Wright). Each article contains references. (NAV)

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***Work Papers of the Summer Institute of Linguistics, University of North Dakota Session***

1995 Volume 39

Editor: J. Albert Bickford

Preface iii

Index to Volumes 18-38 (1974-1994) 1
*Stephen A. Marlett and J. Albert Bickford*

Laryngeal licensing and syllable well-formedness in Quiegolani Zapotec 11
*Cheryl A. Black*

A grammar sketch of the Kaki Ae language 33
*John M. Clifton*

Pronouns in Mexican Sign Language 81
*Marilyn Plumlee*

Madija predicates 93
*Pamela S. Wright*

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# Preface

The work papers this year, as usual, present a variety of languages and topics under study by students and staff associated with the linguistic program offered by the Summer Institute of Linguistics in cooperation with the University of North Dakota. Included also in this volume is an index to the past 21 volumes of the work papers.

Black's work on Quiegolani Zapotec arises out of considerable work she has done on this language's phonology and syntax. In this case, she considers data originally presented in these work papers by Regnier (1993)[1] and their implications for current phonological theory, especially the Sonority Sequencing Generalization and the Laryngeal Constraint. She argues that a satisfactory analysis of these facts can be achieved by incorporating the notion of a constraint hierarchy (from Optimality Theory) within a more traditional, derivational phonology.

Clifton's sketch of Kaki Ae grammar describes a language that has had very little coverage in the linguistic literature previously. Spoken by about 300 people in Papua New Guinea, and not closely related to any other language, its presentation here represents an ongoing concern by SIL to provide basic documentation of the structure of the full variety of natural languages currently spoken, especially in light of current concerns about the rapid rate at which languages are dying. Clifton's paper covers phonology, morphology, and syntax of Kaki Ae and includes a word list and collection of texts.

Plumlee's paper represents a special interest at UND in Mexican Sign Language. This started with a basic sociolinguistic survey presented in Bickford 1989 and a more elaborate one by several staff and students who compiled their research during the 1992 summer program. (This work was done in cooperation with the Mexico Branch of the Summer Institute of Linguistics, which will soon be publishing some of the results of the second survey in its work papers.) Then, one section of the Institute's Field Methods course in 1993 used MSL as a field language. Plumlee's paper, developed out of this course, presents (to our knowledge) the first published information on a significant portion of the grammatical structure of this language.

Wright's paper, a slight revision of her M.A. thesis at UND, examines several previously-unexplained aspects of verbal morphology and syntax in Madija, an Arauan language of Peru and Brazil. She shows how these facts can be given a straightforward account, using the framework of Relational Grammar. In turn, her work provides further evidence for several theoretical proposals that have been advanced within that framework. (Madija also appeared last year in the Work Papers in Liclán and Marlett's (1994) data squib on vowel features.)

I would like to thank Steve Marlett and John Clifton for their help in reviewing and editing several submissions, Cathy Marlett for drawing diagrams and designing the cover, Margaret Owen for her sharp eye in copy editing all these papers, Cheri Black and John Clifton for typesetting their own submissions, and Ed Owen for preparing the final typeset copy of the other two papers.

J. A. B.

[1] See the Index, pp. 1-9, for full citations of works mentioned in this preface.

# Index to Volumes 18–38 (1974–1994)

Stephen A. Marlett and J. Albert Bickford

*Included here is an index to the articles that have appeared in Volumes 18–38 of these work papers and the associated supplements. For earlier volumes, see the* Index of Vols. 1–17 of the Workpapers of SIL-UND, *published in Volume 18 (1974), pp. vii–xii.*

*The index is in three sections. Section 1 lists the volumes chronologically, giving volume number, year of publication, and editor(s). Section 2 lists individual articles by author and year. (To construct a full bibliographic citation for an article, combine relevant information from both sections.) Section 3 is an index by language.*

## 1. Primary Volumes and Supplements

For bibliographic purposes, the full name of this publication is *Work Papers of the Summer Institute of Linguistics, University of North Dakota Session*. The "Supplements" are separate monographs published alongside the regular work papers; these are cross-referenced to the list of articles (sect. 2) below, where the rest of the citation is given under the author's name.

Volume 18, 1974. John Daly and David Thomas, eds.

Volume 19, 1975. Richard A. Rhodes, ed.

Volume 20, 1976. Richard A. Rhodes, ed.

Volume 20, Supplement 1, 1976. *See* [58].

Volume 20, Supplement 2, 1976. *See* [59].

Volume 20, Supplement 3, 1976. *See* [98].

Volume 20, Supplement 4, 1976. *See* [137].

Volume 21, 1977. John P. Daly. ed.

Volume 22, 1978. John P. Daly. ed.

Volume 23, 1979. John P. Daly and Margaret H. Daly, eds.

Volume 23, Supplement, 1979. *See* [44].

Volume 24, 1980. John P. Daly and Margaret H. Daly, eds.

Volume 25, 1981. John P. Daly and Margaret H. Daly, eds.

Volume 25, Supplement, 1981. *See* [21].

Volume 26, 1982. Desmond C. Derbyshire, ed.

Volume 27, 1983. Desmond C. Derbyshire, ed.

Volume 28, 1984. Desmond C. Derbyshire, ed.

Volume 29, 1985. Desmond C. Derbyshire, ed.

Volume 30, 1986. Desmond C. Derbyshire, ed.

Volume 31, 1987. Desmond C. Derbyshire, ed.

Volume 32, 1988. Desmond C. Derbyshire, ed.

Volume 33, 1989. Robert A. Dooley and J. Albert Bickford, eds.

Volume 34, 1990. Robert A. Dooley and John Clifton, eds.

Volume 35, 1991. Robert A. Dooley and J. Stephen Quakenbush, eds.

1995 Work Papers of the Summer Institute of Linguistics
University of North Dakota Session
Volume 39, 1-9.

Volume 36, 1992. Robert A. Dooley and David F. Marshall, eds.

Volume 37, 1993. Robert A. Dooley and Jim Meyer, eds.

Volume 38, 1994. Stephen A. Marlett and Jim Meyer, eds.

**2. Index of Authors**

[1] Abdías, Pablo E., Daniel Everett and James Walker. 1984. A beginning sketch of the Huastec noun phrase. Pp. 91–129.

Adams, Patsy. *See* [68].

[2] Agee, Daniel and Stephen Marlett. 1986. Indirect objects and incorporation in Mazatec. Pp. 59–76.

[3] Allen, Barbara J. 1978. Goal advancement in Southern Tiwa. Pp. 86–97.

[4] Allen, Barbara Jane and Donald G. Frantz. 1983. An impersonal passive in Southern Tiwa. Pp. 1–9.

[5] Allen, Barbara J., Donald G. Frantz and Donna B. Gardiner. 1981. Phantom arcs in Southern Tiwa. Pp. 1–10.

[6] Allen, Barbara and Donna B. Gardiner. 1977. Noun incorporation in Isleta. Pp. 45–60.

[7] Bearth, Thomas. 1974. The dual structural criterion reviewed. P. 1.

[8] Benton, Joseph P. 1981. The completive and potential form of Chichicapan Zapotec verbs. Pp. 11–30.

[9] Bickford, J. Albert. 1982. Initial and non-initial indirect objects in Spanish. Pp. 118–157.

[10] Bickford, J. Albert. 1985. Fortis/lenis consonants in Guichicovi Mixe: A preliminary acoustic study. Pp. 195–208.

[11] Bickford, J. Albert. 1989. Lexical variation in Mexican Sign Language. Pp. 1–29.

[12] Bickford, J. Albert and Stephen A. Marlett. 1988. The semantics and morphology of Mixtec mood and aspect. Pp. 1–39.

[13] Camburn, Janet K. 1984. A Relational Grammar approach to Kera syntax. Pp. 1–49.

[14] Clifton, John M. 1986. Orthographic reform in Kope. Pp. 1–12.

[15] Clifton, John M. 1988. Nonsyllabic vocoids. Pp. 41–58.

[16] Clifton, John. 1990. Case marking strategies in Kope. Pp. 1–19.

[17] Constable, Peter G. 1989. Reflexives in Vera Cruz Huastec. Pp. 31–65.

[18] Cook, Curtis D and Donald G. Frantz. 1978. On Zuni "passives". Pp. 62–70.

Cooney, Brendan. *See* [96].

[19] Culy, Martin M. 1989. A typology of Koine relative clauses. Pp. 67–92.

[20] Daly, John P. 1978. Notes on Diuxi Mixtec. Pp. 98–113.

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[22] Derbyshire, Desmond C. 1979. A diachronic explanation for the origin of OVS. Pp. 35–46.

[23] Derbyshire, Desmond C. 1982. Arawakan (Brazil) morphosyntax. Pp. 1–81.

[24] Derbyshire, Desmond C. 1983. Ergativity and transitivity in Paumari. Pp. 11–28.

[25] Derbyshire, Desmond C. 1991. Are Cariban languages moving away from or towards ergative systems? Pp. 1–29.

[26] Derbyshire, Desmond C. and Geoffrey Pullum. 1979. Object initial languages. Pp. 1–34.

[27] Diehl, Lon. 1975. A new look at new nodes: Scope of predication and surface structure parsing in natural language. Pp. 151–158.

[28] Diehl, Lon. 1975. Space case: Some principles and their implications concerning linear order in natural language. Pp. 93–150.

[29] Dooley, Robert A. 1987. Basic configurations of pragmatic structuring. Pp. 1–27.

[30] Dooley, Robert A. 1988. Pragmatics and grammar: Motivation and control. Pp. 59–86.

[31] Dooley, Robert A. 1989. Switch reference in Mbyá Guaraní: A fair-weather phenomenon. Pp. 93–119.

[32] Dooley, Robert A. 1991. A double-verb construction in Mbyá Guaraní. Pp. 31–66.

[33] Eck, Jerry. 1974. Magindanao penultimate vowels. Pp. 125–131.

[34] Elson, Benjamin and Stephen A. Marlett. 1983. Popoluca evidence for syntactic levels. Pp. 107–134.

[35] Evans, Donna. 1982. On coexistence and convergence of two phonological systems in Michif. Pp. 158–173.

[36] Everett, Daniel L. 1984. Clitic doubling and M-Chains in Pirahã. Pp. 51–89.

[37] Everett, Daniel. 1985. A note on ergativity, S′ and S″ in Karitiana. Pp. 69–81.

[38] Everett, Daniel. 1986. Ternarity and obligatory branching in Pirahã. Pp. 13–41.

[39] Everett, Daniel L. 1988. Anaphoric indices and inalienable possession in Brazilian Portuguese. Pp. 87–91.

[40] Everett, Daniel L. 1988. Clitics, case, and word order in Yagua. Pp. 93–142.

Everett, Daniel. *See also* [1].

[41] Franklin, Karol J. 1993. Obligatory dative clitic doubling in Spanish. Pp. 151–183.

[42] Frantz, Donald G. 1977. Downstairs transitivity in clause union. Pp. 77–78.

[43] Frantz, Donald G. 1977. A new view of *to*-contraction. Pp. 71–76.

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[45] Frantz, Donald G. 1983. Advancements to direct object in Chi-Mwi:ni. Pp. 29–36.

Frantz, Donald G. *See also* [4], [5], [18].

Friberg, Barbara. *See* [46].

[46] Friberg, Timothy, Barbara Friberg and Richard Pittman. 1974. More on the generation of tones from registers (Part II). Pp. 13–14.

[47] Friedman, Lindsay Criper, Tej Ratna Kansakar, Jyoti Tuladhar, Austin Hale. 1983. On the variants of Newari vowels: A study in phonological non-alignment. Pp. 37–72.

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Gardiner, Donna B. *See also* [5], [6].

[49] Gittlen, Laura and Stephen A. Marlett. 1985. Ñumí Mixtec syllable structure and morphology. Pp. 175–194.

[50] Glidden, Suellyn H. 1985. The Koh verbal system. Pp. 223–282a.

[51] Gunn, Judy. 1982. The use of Buglere passives illustrated from a narrative text. Pp. 101–117.

Hale, Austin. *See* [47].

[52] Harrison, Carl H. 1983. Typological disharmony and ergativity in Guajajara. Pp. 73–106.

[53] Harrison, Carl H. and Victor P. Monus. 1978. The particle *t'ah* in Slavey discourse. Pp. 47–53.

[54] Healey, Alan. 1974. Comments on the decimal classification of New Guinea languages. Pp. 25–26.

[55] Huttar, George L. 1974. Serial verbs in Surinam creoles. Pp. 55–66.

Kansaker, Tej Ratna. *See* [47].

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[62] Kotynski, Edward A. 1988. Tabaru phonology and morphology. Pp. 143–216.

[63] Leitch, Myles. 1994. The distribution and properties of Babole prenasalized segments. Pp. 101–112.

[64] Leman, Wayne. 1977. Remarks on Cheyenne obviation and pluralization. Pp. 89–113.

[65] Levinsohn, Stephen H. 1990. Unmarked and marked instances of topicalization in Hebrew. Pp. 21–33.

[66] Levinsohn, Stephen H. 1991. The definite article with proper names for referring to people in the Greek of Acts. Pp. 91–102.

[67] Levinsohn, Stephen H. 1992. Preposed and postposed adverbials in English. Pp. 19–31.

[68] Liclán, Patsy Adams and Stephen A. Marlett. 1994. Vowel features in Madija. Pp. 113–114.

[69] Loos, Eugene. 1975. Nasalization in Sharanahua. Pp. 24–27.

[70] Loos, Eugene. 1975. Three different predicate relationships that underlie some surface structure possessives in English. Pp. 22–23.

[71] Lyman, Larry. *See* [21].

[72] Lyman, Rosemary. 1977. Participant identification in Choapan Zapotec. Pp. 115–131.

[73] Marchese, Lynell. 1977. The verbal system in Godie. Pp. 133–156.

[74] Marlett, Stephen A. 1975. Evidence for raising in Koine Greek. Pp. 1–21.

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[76] Marlett, Stephen A. 1976. A sketch of Seri verb morphophonemics. Pp. 39–66.

[77] Marlett, Stephen A. 1977. The imperative morpheme in Seri. Pp. 25–44.

[78] Marlett, Stephen A. 1977. Loanword lengthening in Seri. Pp. 23–24.

[79] Marlett, Stephen A. 1978. Aspects of Seri phonology. Pp. 114–146.

[80] Marlett, Stephen A. 1979. The abstract consonant in Seri. Pp. 66–98.

[81] Marlett, Stephen A. 1979. Personal and impersonal passives in Seri. Pp. 99–124.

[82] Marlett, Stephen A. 1985. Some aspects of Zapotecan clausal syntax. Pp. 83–154.

[83] Marlett, Stephen A. 1987. Extraction from complement clauses in Koine Greek. Pp. 65–73.

[84] Marlett, Stephen A. 1987. The syllable structure of Seri. Pp. 29–64.

[85] Marlett, Stephen A. 1990. Zapotec pronoun classification. Pp. 35–58.

[86] Marlett, Stephen A. 1993. Goals and indirect objects in Seri. Pp. 1–20.

[87] Marlett, Stephen A. 1994. Nasalization in Huajuapan Mixtec. Pp. 122–124.

[88] Marlett, Stephen A. 1994. One less crazy rule. Pp. 57–58

[89] Marlett, Stephen A. and Mary B. Moser. 1994. Seri vowels and the obligatory contour principle. Pp. 117–118.

[90] Marlett, Stephen A. and Mary B. Moser. 1994. Switch reference in Seri. Pp. 119–121.

[91] Marlett, Stephen A. and Mary B. Moser. 1994. Vowel length in Seri possessed nouns. Pp. 115–116.

[92] Marlett, Stephen A. and Velma B. Pickett. 1985. Syllable structure and aspect morphology in Isthmus Zapotec. Pp. 153–174.

Marlett, Stephen A. *See also* [2], [12], [34], [49], [68], [101].

[93] Marshall, David F. 1992. The role of language in the dissolution of the Soviet Union. Pp. 33–69.

[94] Maryott, Kenneth R. 1974. Sangil elevationals and the performative analysis. Pp. 139–203.

McKeever, Michael. *See* [114].

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[96] Meyer, Jim and Brendan Cooney. 1994. The paragraph: Towards a richer understanding. Pp. 65–74

[97] Meyer, Jim. 1994. Writing, teacher training, and grammar. Pp. 59–64.

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Monus, Victor P. *See* [53].

[99] Moser, Mary B. 1976. Switch-reference in Seri. Pp. 67–76.

[100] Moser, Mary B. 1977. Articles in Seri. Pp. 1–22.

[101] Moser, Mary B. and Stephen A. Marlett. 1993. Seri kinship terminology. Pp. 21–35.

Moser, Mary B. *See also* [89], [90], [91].

[102] Mugele, Robert L. 1976. Lalana Chinantec y-. Why? Pp. 1–38.

[103] Nivens, Richard J. 1986. Grammatical relations in Eskimo: A response to Kalmár. Pp. 77–88.

[104] Oltrogge, David F. 1974. A sketch of Mayan languages. Pp. 29–54.

[105] Pappenhagen, Ronald W. 1986. Kanasi: A brief grammar sketch. Pp. 106–132.

[106] Parker, Steve. 1990. Laminal sibilants in Chamicuro. Pp. 59–74.

[107] Parker, Steve. 1991. On the syllabification of */tl/* clusters in Spanish. Pp. 103–117.

[108] Payne, Doris L. 1984. Evidence for a Yaguan-Zaparoan connection. Pp. 131–156.

[109] Payne, Tom E. 1984. Locational relations in Yagua narrative. Pp. 157–192.

[110] Payne, Thomas E. 1985. Referential distance and discourse structure in Yagua. Pp. 1–67.

Pickett, Velma B. *See* [92].

[111] Pike, Kenneth L. 1983. In rhetoric the passage from A to B is not equal to passage from B to A. Pp. 135–139.

[112] Pinson, Thomas M. 1994. Dakota Sioux objects. Pp. 1–44

[113] Pinson, Thomas M. 1994. Possessor ascension in Dakota Sioux. Pp. 75–92.

Pittman, Richard. *See* [46].

[114] Plunkett, Gray and Michael McKeever. 1986. A Relational Grammar approach to verb agreement in Lakota. Pp. 89–105.

Pullum, Geoffrey. *See* [26].

[115] Purwo, H. Bambang Kaswanti. 1978. The point-line dimension in Indonesian. Pp. 54–61.

[116] Quakenbush, J. Stephen. 1991. Agutaynen glottal stop. Pp. 119–131.

[117] Regnier, Sue. 1993. Quiegolani Zapotec phonology. Pp. 37–63.

[118] Rhodes, Mary. *See* [21].

[119] Rhodes, Rich. 1974. A note on English plural formation. P. 11.

[120] Roberts, James S. 1994. Nontonal floating features as grammatical morphemes. Pp. 87–100.

[121] Scruggs, Terri. 1980. Notes on African linguistics. Pp. 142–169.

[122] Seiler, Wolf. 1978. The modalis case in Iñupiat. Pp. 71–85.

[123] Shinen, David C. and Marilene R. Shinen. 1978. Some discourse features in Siberian Yupik Eskimo. Pp. 29–46.

Shinen, Marilene R. *See* [123].

[124] Smith, Kenneth D. 1974. A computer analysis of Vietnam language relationships. Pp. 99–113.

[125] Smith, Kenneth D. 1974. Text vs. dictionary letter frequencies for primers. Pp. 77–97.

[126] Speck, Charles H. 1978. Texmelucan suprasegmental phonology. Pp. 1–28.

[127] Speck, Charles. 1994. The existential use of positional verbs in Texmelucan Zapotec. Pp. 75–86.

[128] Speck, Charles. 1994. Texmelucan Zapotec regular verbs. Pp. 125–129.

[129] Stewart, Anne. 1982. Complexity and constituent order in Matihuaca (Huanuco) Quechua. Pp. 82–100.

[130] Stewart, Anne M. 1984. New approaches to coping with stress: A case study in Conchucos Quechua. Pp. 193–212.

[131] Swartz, Stephen M. 1974. Some Choctaw sentence structures. Pp. 115–124.

[132] Thiele, Irma. 1994. The tapir: A Yanomami text. Pp. 45–56

[133] Thomas, David. 1974. Batteries at other ranks. Pp. 15–18.

[134] Thomas, David. 1974. A proposed structural model. Pp. 19–24.

[135] Thomas, David. 1974. What is why (Or, why is what.) Pp. 9–10.

[136] Thomas, David and Wanna Tienmee. 1983. An acoustic study of Northern Khmer vowels. Pp. 141–146.

[137] Thomas, Dorothy M. 1976. *A phonological reconstruction of Proto-East-Katuic*. Vol. 20, Supplement 4.

[138] Thomas, John Paul. 1992. Tone in Komo. Pp. 71–160.

Tienmee, Wanna. *See* [136].

[139] Tuggy, David. 1980. The antigone constraint. Pp. 1–50.

[140] Tuggy, David. 1980. ¡Ethical dative and possessor omission sí, possessor ascension no! Pp. 97–141.

[141] Tuggy, David. 1983. Aztec causative/applicatives in Space Grammar. Pp. 147–160.

[142] Tuggy, David. 1985. The inflectional/derivational distinction. Pp. 209–222.

[143] Tuggy, David. 1989. The Nahuatl verb *maka*: A cognitive grammar analysis. Pp. 121–147.

Tuladhar, Jyoti. *See* [47].

[144] Unseth, Pete. 1986. Reduplication in Majang. Pp. 43–58.

[145] Van Valin, Robert D., Jr. 1992. Role and Reference Grammar. Pp. 65–75.

Walker, James. *See* [1].

[146] Walker, Stephen P. 1989. Tonal instability: tone as part of the feature geometry. Pp. 149–169.

[147] Weaver, Deborah. 1982. Obviation in Mixtec. Pp. 174–262.

[148] Weber, David J. 1983. The relationship of morphology and syntax: evidence from Quechua. Pp. 161–181.

[149] Weber, David. 1989. A morphological parser for linguistic exploration. Pp. 171–183.

[150] Weber, David. 1993. The binding properties of Quechua suffixes. Pp. 77–150.

[151] Wendland, Ernst R. 1975. Lexical recycling in Chewa discourse. Pp. 28–92.

[152] West, David. 1974. Mikasuki verb prefixes. Pp. 67–75.

[153] West, David. 1974. Number in the Mikasuki verb stem. Pp. 133–138.

[154] Willett, Elizabeth. 1979. Reduplication and accent in Southeastern Tepehuan. Pp. 47–65.

[155] Willett, Elizabeth R. 1981. Noun phrase components in Southeastern Tepehuan. Pp. 31–58.

[156] Willett, Thomas L. 1980. Clause types in Southeastern Tepehuan. Pp. 51–72.

[157] Willett, Thomas L. 1980. Sentence components in Southeastern Tepehuan. Pp. 73–96.

[158] Willett, Thomas L. 1981. Advancements to direct object in Southeastern Tepehuan. Pp. 59–74.

[159] Wimbish, John. 1986. The languages of the Zambales Mountains: A Philippine lexicostatistic study. Pp. 133–142.

### 3. Index of Languages

The following index includes those languages which form the primary focus of the articles listed in Section 2. Some articles focus on a language family or a geographic region rather than a specific language; these are listed under the name of the family or region. Articles which focus on more general issues are indexed only by author.

Agutaynen 116
Arawakan 23
Aztec, Orizaba 143
Aztec, Tetelcingo 141

Babole 63
Bahasa Indonesia 115
Brao 58
Buglere 51

Cariban 25
Chamicuro 106
Chewa 151
Cheyenne 64
Chi-Mwi:ni 45
Chinantec, Lalana 102
Choctaw 131
Creoles, Surinam 55

Dakota 112, 113

English 67, 70, 119, 139
English, Red Lake Falls MN 56
Eskimo, Iñupiat 103, 122
Eskimo, Siberian Yupik 123

French, Red Lake Falls MN 56

Godie 73
Greek, Koine 19, 66, 74, 75, 83
Guajajara 52
Guaraní, Mbyá 31, 32

Hebrew 65
Huastec (Maya) 1, 17

Indonesian 115
Iñupiat 122
Isleta 6. *See also* "Tiwa, Southern".

Kanasi 105
Karitiana 37

Katuic, Proto-East 137
Kera 13
Khmer 59
Khmer, Northern 136
Koh 50
Komo 138
Kope 14, 16

Lakota 114

Madija 68
Magindanao 33
Majang 144
Mayan 104
Mazatec, San Jeronimo 2
Mexican Sign Language 11
Michif 35
Mikasuki 152, 153
Mixe, Guichicovi 10
Mixtec 12, 147
Mixtec, Diuxi 20
Mixtec, Huajuapan 87
Mixtec, Ñumí 49

Nahuatl, Orizaba 143
Nahuatl, Tetelcingo 141
New Guinea 54
Newari 47

Paumari 24
Pirahã 36, 38
Popoluca, Sierra 34
Portuguese, Brazilian 39

Quechua, Conchucos 130
Quechua, Huallaga (Huanuco) 148, 150
Quechua, Matihuaca (Huanuco) 129

Red Lake Falls MN 56

Sangil 94
Seri 76, 77, 78, 79, 80, 81, 84, 86, 88, 89, 90, 91, 99, 100, 101
Sharanahua 69
Sioux, Dakota 112, 113
Sioux, Lakota 114
Slavey 53
Soviet Union 93
Spanish 9, 41, 107, 140
Stiêng *98*
Surinam. *See* "Creoles, Surinam"

Tabaru 62
Tepehuan, Southeastern 154, 155, 156, 157, 158
Thai 57
Tiwa, Southern 3, 4, 5, 48

Vietnam 124

Yagua 40, 108, 109, 110
Yanomami 132
Yupik, Siberian 123

Zambales Mountains 159
Zaparoan 108
Zapotec 82, 85
Zapotec, Chichicapan 8
Zapotec, Choapan 72
Zapotec, Isthmus 92
Zapotec, Quiegolani 117
Zapotec, Texmelucan 126, 127, 128
Zoque, Chimalapa 61
Zuni 18

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# Laryngeal Licensing and Syllable Well-formedness in Quiegolani Zapotec*

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*A number of the complex onset clusters allowed in Quiegolani Zapotec do not follow the Sonority Sequencing Generalization (Greenberg 1978, Selkirk 1984, etc. The distribution of the laryngeal features likewise does not follow the Laryngeal Constraint (Lombardi 1991, 1995a). These recalcitrant facts are analyzed here via a combination of language-specific rules and universal constraints ordered within a constraint hierarchy, which operates within a derivational phonology.*

## 1 Introduction

This paper analyzes the complex syllable structure and distribution of laryngeal features in Quiegolani Zapotec (henceforth QZ), one of the Southern group of Zapotecan languages spoken in Oaxaca, Mexico. The Otomanguean language family, to which QZ belongs, has been documented (Jaeger & Van Valin 1982, Marlett & Pickett 1987, Marlett & Ward 1990, Regnier 1993) as having consonant clusters which violate the normal sonority sequencing patterns given as universals by Greenberg (1978) and further discussed in Bell & Saka (1983), Selkirk (1984), etc. In addition to clusters beginning with voiceless fricatives, which are familiar from the behavior of *s* in English, QZ exhibits many reversed onset clusters consisting of a sonorant or glide followed by an obstruent, as shown in (1).[1]

*Thanks to Armin Mester, Junko Ito, Jaye Padgett, and Andrew Black for helpful comments on earlier versions of this paper.

[1]The data in the paper are mostly taken from Regnier (1993). In the examples, capitalization (other than *N*) indicates voicelessness, ˜ indicates a trill. V$^{\text{ʔ}}$V represents the laryngealized or interrupted vowels.

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(1)

| | | | |
|---|---|---|---|
| a. | /y + se$^{?}$ed/ | [Ise$^{?}$et$^{h}$] | 'POTENTIAL-learn' |
| | /y + ga$^{?}$az/ | [iga$^{?}$as] | 'POTENTIAL-turn.black' |
| | /ydo$^{?}$o/ | [ido$^{?}$o] | 'church building' |
| b. | /wkit/ | [Ukit$^{h}$] | 'game' |
| | /w + git/ | [ugit$^{h}$] | 'COMPLETIVE-play' |
| c. | /rsil/ | [R̃sil] | 'morning' |
| | /r + to$^{?}$o/ | [R̃to$^{?}$o] | 'HABITUAL-sell' |
| | /r + da$^{?}$a/ | [r̃da$^{?}$a] | 'HABITUAL-crawl' |

The distribution of voicing in (1) and (2), native speaker intuition, and tone patterns all show that these clusters are tautosyllabic, so we must assume that while Sonority Sequencing plays a role in QZ, additional factors are also involved.

These reversed clusters are actually disfavored by the language itself as well as universally, as evidenced by the fact that phrasal resyllabification takes place whenever possible to move the initial sonorant into the coda of the preceding syllable. This is shown in (2), where the sonorant is voiceless when it is in the onset but voiced in (2c) since it is now syllabified as the coda.

(2)

Phrase initially or in isolation:

| | | | |
|---|---|---|---|
| a. | /r + se$^{?}$ed/ | [R̃se$^{?}$et$^{h}$] | 'HABITUAL-learn' |
| b. | /r + ki$^{?}$iN + t/ | [R̃ki$^{?}$int$^{h}$] | 'HABITUAL-serve-NEG' |

Phrase internally dependent upon syllabification:

| | | | |
|---|---|---|---|
| c. | /Ne rse$^{?}$ed/ | [ner.se$^{?}$et$^{h}$] | 'that HABITUAL-learn' |
| d. | /ɓat rki$^{?}$iNt/ | [ɓat.R̃ki$^{?}$int$^{h}$] | 'already HABITUAL-serve-NEG' |

In the analysis presented here, the markedness of the reversed clusters is captured in two ways: (i) via onset filters which restrict which consonants may appear in clusters, and (ii) via a preference hierarchy of well-formedness constraints (as proposed by Prince & Smolensky 1993 and McCarthy & Prince 1993 for Optimality Theory) which assures that the reversed clusters will be tautosyllabic only when the sonorant cannot be resyllabified as a coda.

After giving the Segmental Inventory, section 2 discusses which laryngeal features are necessary to account for the fortis-lenis contrasts in QZ. Section 3 then details the well-formedness constraints on the QZ syllable structure, and section 4 shows how the constraint hierarchy accounts for the fact that the reversed clusters only occur word-

initially, making an adjunction rule unnecessary. The well-formedness constraints alone do not account for the full distribution of the laryngeal features, however, and QZ does not obey the Laryngeal Constraint proposed by Lombardi (1991, 1995a) for a number of languages, so lexical and post-lexical (or word-level and phrase-level) phonological rules are posited in section 5. This analysis thus differs from the Optimality Theory model in viewing the hierarchy of well-formedness constraints as applying continuously throughout a derivational phonology (see also H.A.Black 1993).

## 2 Laryngeal Features on QZ Phonemes

QZ has six vowels as shown in (3).

(3)

| | Front | Back Unrounded | Back Rounded |
|---|---|---|---|
| High | i | | u |
| Mid | e | | o |
| Low | æ | a | |

Each vowel can also occur in a laryngealized or interrupted form [V$^{?}$V]. QZ does not have any long vowels or clusters.

The underlying segmental inventory for the QZ consonants is shown in (4).[2]

(4)

| | Bilabial | Alveolar | Palato-Alveolar | Retro-flexed | Velar | Palatal Velar | Labial Velar |
|---|---|---|---|---|---|---|---|
| Stops | p | t | | | k | k$^{y}$ | k$^{w}$ |
| | | d | | | g | g$^{y}$ | g$^{w}$ |
| Affricates | | c | č | ç̌ | | | |
| | | | ǰ | | | | |
| Fricatives | | s | | ş̌ | | | |
| | | z | | ž̧ | | | |
| Nasals | m | n | | | | | |
| Laterals | | l | | | | | |
| Approximants | ƀ | | y | r | | | w |

[2]The alveolar nasal is analyzed as /N/ which is unspecified for [Place]; it surfaces as homorganic with a following consonant, with a [coronal] default before vowels. /ƀ/ is pronounced phonetically as a bilabial fricative, but phonologically it patterns as a sonorant, in both its distribution in clusters and its devoicing behavior. (See Hayes (1984) for discussion of similar behavior of /v/ in Russian.) Some examples are given in (5a), (7), (22), (26e), and (30).

Though in QZ there is a clear voicing distinction, in Zapotecan languages in general the distinction between the following pairs of QZ segments is considered to be fortis/lenis rather than voiceless/voiced: t–d, s–z, s̱–ẕ, č–j, k–g, $k^y$–$g^y$, $k^w$–$g^w$. The phonetic quality of the segments varies considerably throughout the language family. The fortis obstruents are always voiceless, while the lenis obstruents vary in voicing. Fortis obstruents are of somewhat longer duration than their lenis counterparts.[3] Further, in a number of Zapotecan languages the fortis/lenis contrast extends to the nasals and liquids. In these cases, both fortis and lenis are voiced, with the fortis segments distinguished by length and intensity (Nellis & Hollenbach 1980). Jaeger & Van Valin (1982) claim that, because both fortis and lenis sonorants are voiced and lenis obstruents are often devoiced, the designation voiceless versus voiced is not appropriate in Zapotec.

Fortis and lenis are not features, however, so we must still seek a featural representation. Jaeger & Van Valin (1982) note that in Yatee Zapotec the consonant clusters tend to be homogeneous along a voiceless/voiced grouping, rather than on a strictly fortis/lenis grouping. Two obstruents in a cluster must be either both fortis (voiceless) or both lenis (voiced or partly voiced), but both fortis and lenis nasals and laterals (which are voiced) can follow lenis obstruents, since they are also voiced. This indicates that the feature [voice] is operative in Zapotec. Marlett & Pickett (1987) use [±voice] to distinguish the obstruents in Isthmus Zapotec and treat the fortis nasals and lateral as geminates, and Marlett & Ward (1990) mark the lenis obstruents in Quioquitani Zapotec with a privative [voice] feature.

A second laryngeal feature [spread glottis] is also involved and is sometimes used instead of [voice] to distinguish fortis obstruents from lenis ones (for example, Olney 1992 for Ngalakan). Butler (1988) notes that the fortis obstruents in Yatzachi Zapotec are aspirated. Marlett & Ward (1990) report that in Quioquitani Zapotec (which is closely related to QZ) fortis obstruents are aspirated word-finally, while lenis obstruents simply devoice in that position. Like QZ, Quioquitani Zapotec does not have a fortis/lenis distinction in nasals or laterals. Regnier (1993) describes the QZ contrast between the fortis and lenis obstruents as clearest in intervocalic position, where fortis obstruents are voiceless and somewhat longer and lenis obstruents are voiced and shorter. Utterance-finally the contrast is neutralized with both fortis and lenis members occurring unvoiced and with aspiration on stops and affricates. Utterance-initially there is a tendency for the lenis consonants to devoice, but this varies from speaker to speaker.

Both [voice] and [spread glottis] are thus operative in QZ consonants, and [constricted glottis] is used within the vowel system for the laryngealized or interrupted vowels. Each of these features can be used privatively, as strongly argued for in Mester & Itô (1989), Cho (1990), and Lombardi (1991, 1995b). Only lenis obstruents must be underlyingly specified with the feature [voice], with default voicing of sonorants occur-

[3]Bickford (1985) gives acoustic measurements of the length distinction between fortis and lenis consonants in Guichicovi Mixe, a Mixe-Zoquean language spoken in Oaxaca, Mexico.

ring post-lexically. While the fortis obstruents could be specified as [spread glottis] as well, this is not required; the utterance-final aspiration is accounted for by rule (34) in section 5. Alternatively specifying only the fortis obstruents as [spread glottis] without any [voice] specification for lenis obstruents is also possible. However, the account of the voicing agreement in the reversed clusters would not then follow from the Universal Tautosyllabic Voicing Constraint (Harms 1973) (see section 5). I therefore use [voice] as the distinctive feature.

# 3 Syllable Structure and Well-formedness Constraints

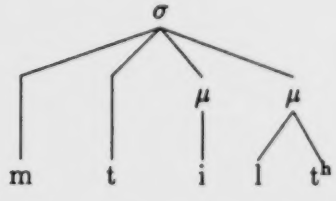
Syllables in QZ may maximally contain three segments in the onset, two positions in the nucleus, and two segments in the coda, though most syllables have only simple onsets and optional simple codas. (5) gives examples of longer monomorphemic words consisting of a single syllable.

(5) a. [ngɓa$^{?}$an] 'thief'
b. [mtilt$^{h}$] 'jicama' (a root vegetable)

The syllable template is: $[C_3\ C_2\ C_1\ V_1\ V_2\ C_4\ C_5]_\sigma$

Under the version of moraic theory adopted in Hayes (1989), (5b) would be represented as shown in (6).

(6)




The size of the syllable template is evidenced by epenthesis facts on both ends. For example, when the possessive prefix is added to a noun with a simple onset, a two-consonant onset is formed (7a). If the onset of the noun is already a cluster, however, an epenthetic vowel (either *a* or *e*, depending upon the speaker) is added (7b). (Triconsonantal onset clusters must begin with a homorganic nasal, as explained in section 3.1.)

(7) a. /ṣ̌ + ɓič/ [ṣ̌ɓič$^{h}$] 'POS-cat'
b. /ṣ̌ + ɓdu$^{?}$u/ [ṣ̌aɓ.du$^{?}$u] 'POS-banana'

At the coda end, the negative suffix *-t* may be added to a verb which has a simple coda, forming a coda cluster, but when the suffix -it -r 'more' is also affixed, an epenthetic vowel is added to form two syllables, as shown in (8).[4]

| | | | | |
|---|---|---|---|---|
| (8) | a. | /r + ak + t/ | [rak$t^h$] | 'HABITUAL-be-NEG' |
| | b. | /w + zæl + t/ | [wzæl$t^h$] | 'COMPLETIVE-be.found-NEG' |
| | c. | /n + an + t/ | [nan$t^h$] | 'STATIVE-know-NEG' |
| | d. | /r + ak + t + r/ | [rak.tre] | 'HABITUAL-be-NEG-MORE' |
| | e. | /w + zæl + t + r/ | [wzæl.tre] | 'COMPLETIVE-be.found-NEG-MORE' |
| | f. | /n + an + t + r/ | [nan.teR] | 'STATIVE-know-NEG-MORE' |

## 3.1 Onset and Coda Restrictions

Of the positions in the syllable template, only $C_1$ and $V_1$ are required, and only these positions are not restricted as to which segments may fill them. Normally, languages place restrictions on codas, while simple onsets are unrestricted. In QZ simple onsets and simple codas are unrestricted, but filters are needed to restrict the segments allowed in the complex onsets.

The $C_3$ position may only be filled by a nasal which is homorganic with the following consonant. This is expressed in the filter in (9), following the lead of Itô (1989) and assuming the Linking Constraint in Hayes (1986).

(9) * [ [+nasal] [+cons] [+cons]
$\sigma$ |
[Place]

Two-consonant onset clusters consist of either a stop followed by any consonant higher on the sonority hierarchy, a voiceless (fortis) fricative followed by any other consonant (with obstruents in the $C_1$ position following a fortis (voiceless) fricative being devoiced), or a sonorant followed by any other consonant. The third option is the reversed cluster, which will resyllabify if possible. The first two possibilities are the same as those allowed in English (as noted in Selkirk 1982).

Conspicuously absent from the possible segments occupying the $C_2$ position are the affricates and voiced fricatives. The lack of affricates before another consonant can be explained by a process of deaffrication, which can be clearly seen in Quioquitani Zapotec. Marlett & Ward (1990) report that the Habitual aspect marker is /c/. Deaffrication occurs whenever /c/ is prefixed to any consonant-initial root yielding [s], as

[4]The reason for the syllabification of /r/ as a complex onset in some cases and as a coda in others is unknown. Capitalization indicates voicelessness.

shown in (10).

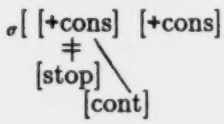
(10) a. /c + as/ [cas] 'HABITUAL-jump'
b. /c + to/ [sto] 'HABITUAL-sell'
c. /c + na/ [sna] 'HABITUAL-awaken'

QZ does not have any prefixes that are affricates, except for an allomorph of the Potential aspect prefix /c-/ which occurs before some /z/ and /ẓ̌/ initial verbs, as well as some vowel-initial verbs. The effect is somewhat hidden due to a coronal continuant merging process, but clearly both deaffrication and devoicing have occurred, as shown in (11).

(11) a. /c + zu/ [su] 'POTENTIAL-stand'
b. /c + ẓ̌obe$^{?}$e/ [s̥obe$^{?}$e] 'POTENTIAL-fly'

We can thus write the rule of Deaffrication as shown in (12), which delinks the [stop] feature in the affricate (assuming the non-linear representation of affricates in Lombardi 1990), accounting for the fact that affricates never begin consonant clusters in syllable onsets.[5]

(12) Deaffrication




The fact that voiced fricatives may not begin consonant clusters is more curious and seems simply to be a language-specific restriction that QZ and English share. For instance, why can neither language have [zl] or [zn] clusters? Those clusters obey Sonority Sequencing and are allowed in other languages such as Yatee Zapotec, Italian, and Russian. The onset filter expressing the restriction that onset clusters may not begin with a voiced fricative is stated in (13), where both single and double linking of the laryngeal node is disallowed.

[5]An account that rules out affricates in consonant clusters on the basis that they fill two positions will not work for QZ, since deaffrication only occurs in initial position in onsets. Affricates may be the second member of an onset cluster (i) and may fill either position in a coda cluster (ii)–(iii).

(i) /mj̃in/ [mj̃in] 'deer'
(ii) /mlenč̣/ [mlenč̣$^{h}$] 'mosquito'
(iii) /w + la + le$^{?}$ej̃ + t/ [wlale$^{?}$ej̃t$^{h}$] 'COMPLETIVE-call-liver-NEG'
='did not believe'

(13) * $_{\sigma}$[ [+cons] [+cons]
(\ ) / [cont]
[Lar]

Though Sonority Sequencing is only minimally relevant in QZ onset clusters, it does play a role in the coda clusters. If we assume a simple sonority scale with stops ≺ affricates ≺ fricatives ≺ sonorants, then $C_4$ must be greater or equal to $C_5$ on the sonority scale, with equality possible only when both are stops.[6]

## 3.2 Constraints on the Syllable Nucleus

The QZ syllable nucleus is itself interesting with respect to laryngeal licensing. QZ does not have any long vowels or diphthongs. The laryngealized vowels are underlyingly contrastive and are realized as interrupted vowels with rearticulation after the short glottal stop. I propose the bimoraic underlying representation for laryngealized vowels given in (14), where I follow Clements (1991) and Odden (1991) in assuming the existence of a vowel-place node. The true vowel is fully specified with its [V-place] features, but the glottalized vowel has only an empty [V-place] node, with features to be filled in as discussed below.[7]

(14)

| | |
|---|---|
| μ | μ |
| [+son] | [+son] |
| [Place] | [Lar] [Place] |
| [V-place] | [constr.] [V-place] |
| ⋮ | [glottis] |

If the following coda consonant $C_4$ is a glide, its place features will be shared with $V_2$; otherwise, $V_1$ spreads its [V-Place] features to $V_2$. This is borne out by the data in (15)–(16). Normally, the vowel quality is identical before and after the glottal stop, as shown in (15).

[6]Two stops in the coda are only found when the negative suffix has been added to a verb ending in a stop. Even then, if the verb-final stop is a coronal, epenthesis results as an antigemination effect triggered by the Obligatory Contour Principle (McCarthy 1986):

/n + ji$^{?}$id + t/ [nji$^{?}$idet$^{h}$] 'UNREAL-come-NEG'

[7]The presence of the [V-place] node on the second mora distinguishes it from a simple glottal stop, which is necessary since checked vowels [V?] and interrupted vowels [V$^{?}$V] contrast in other Zapotecan languages.

(15) a. /ɓa$^{ʔ}$a/ [ɓa$^{ʔ}$a] 'grave'
b. /ɓbo$^{ʔ}$o/ [ɓo$^{ʔ}$o] 'coal'
c. /yu$^{ʔ}$u/ [yu$^{ʔ}$u] 'house'
d. /me$^{ʔ}$ej/ [me$^{ʔ}$ej] 'lion'

But when a laryngealized vowel is followed by a glide, the quality of the glide moves onto the vowel after the interruption, as shown in (16).

(16) a. /kɓa$^{ʔ}$ay/ [kɓa$^{ʔ}$i] 'broom'
b. /g$^{y}$e$^{ʔ}$ey/ [g$^{y}$e$^{ʔ}$i] 'mountain'
c. /meč̣u$^{ʔ}$uy/ [meč̣u$^{ʔ}$i] 'owl'
d. /mæ$^{ʔ}$æw/ [mæ$^{ʔ}$u] 'moon'
e. /do$^{ʔ}$ow/ [do$^{ʔ}$u] 'corn bin'

Though underlyingly contrastive with simple vowels, the laryngealized vowels only occur in the stressed syllable. QZ only has one stress per word and it falls on the first syllable of the root if it is heavy (where both closed syllables and laryngealized syllables count as heavy), otherwise on the second syllable. The foot is therefore a quantity-sensitive iamb built on the root. In compounds, stress is on the final root, indicating that word prominence is rightmost. By looking at compound formation, we can see that the loss of laryngealization in unstressed syllables (leaving only a simple vowel) is an active process rather than simply a morpheme structure constraint. Some examples are given in (17).

(17) a. /le$^{ʔ}$en + zi$^{ʔ}$i/ [lenzi$^{ʔ}$i] 'insides-nose' or 'nostril'
b. /ṣ̌na$^{ʔ}$a + ṣ̌na$^{ʔ}$a/ [ṣ̌naṣ̌na$^{ʔ}$a] 'mother-mother' or 'grandmother'

Randy Regnier (p.c.) pointed out that this process is also sensitive to phrase-final stress, since the laryngealization is lost in the less prominent word in (18).

(18) /te mæ$^{ʔ}$æd ɓe$^{ʔ}$e/ [te mæd ɓe$^{ʔ}$e] 'one child male'

Other Zapotecan languages also bear out this link between the complex vowels and stress. For example, in Mitla Zapotec (Stubblefield & Hollenbach 1991) there are three types of complex vowels, each of which contains a laryngeal feature: vowels can be shortened by a glottal stop, laryngealized (pronounced with a creaky voice in this language), or aspirated. As in QZ, the stress falls only on the final root of a compound in Mitla Zapotec, so all of the three types of complex vowels are shortened

to a simple vowel in the unstressed roots. In Juarez Zapotec (Nellis & Nellis 1983), both a checked vowel [V?] and an interrupted vowel [V$^{?}$V] may occur only in stressed syllables. However, Juarez Zapotec allows compounds to retain as many stresses as there are roots in the compound, so no reduction of the complex vowels is seen in Juarez compounds.[8]

We can see this restriction to stressed syllables as an instance of the Weight to Stress Principle (Prince 1990), which says if a syllable is heavy it must be stressed. When this principle is violated, the response is to delink the mora, making the syllable light. Following Mester (1994) we can assume that this occurs in closed syllables also, but the coda consonant(s) are able to relink to the first mora or directly to the syllable, retaining their prosodic licensing (Itô 1986, Goldsmith 1990, Itô & Mester 1991). The laryngeal feature [constricted glottis] may only be licensed by its own mora, as shown in (19), so when the mora is removed the laryngeal feature cannot be realized.

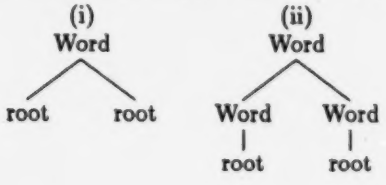
(19) Necessarily:

# 4 The Preference Hierarchy of Constraints

The observation that some well-formedness constraints seem to be violable rather than absolute led to the proposal by Prince & Smolensky (1993) and McCarthy & Prince (1993) that the constraints are hierarchically ranked. A lower ranked constraint may be violated if necessary to enforce a higher ranked constraint (but not vice versa), thus giving the optimal output. Using a preference hierarchy of constraints in QZ will allow us to account for the distribution of the reversed onset clusters without positing special adjunction rules.

At the top of the QZ preference hierarchy come the syllable template and the various

[8]This contrast between QZ and Mitla Zapotec on the one hand and Juarez Zapotec on the other can be analyzed as a difference in the structure of compounds. In QZ and Mitla, compounds consist of multiple roots in a single word (i), whereas in Juarez each part of the compound is itself a word and thus able to bear independent stress (ii).



restrictions on the onset and nucleus discussed in section 3. In addition to those, we need to add a licensing statement that says that nasals (and probably laterals) independently license [voice]. These segments do not participate in the devoicing that applies to the other sonorants in reversed clusters (see section 5). This is probably related to the fact that nasals and laterals, as opposed to the other sonorants, have a fortis/lenis distinction in other Zapotecan languages. I will call this group of constraints SYLLABLE & LARYNGEAL LICENSING.

After this come the two universal principles, the Weight to Stress Principle (WSP) and the Obligatory Contour Principle (OCP). These are not ordered with respect to one another because they apply to different domains. We can clearly see, however, that the WSP must be ranked above PARSE (i.e. do not delete) because a mora and subsequently the laryngeal feature [constricted glottis] and the vowel rearticulation are deleted in order to fulfill the WSP. Similarly, the OCP must dominate both PARSE and FILL (i.e. do not epenthesize), because some OCP violations are corrected by deleting or merging two like segments (as in the coronal continuant merging shown in (11)), and some are corrected by epenthesis (as when two coronal stops come together due to the addition of the negative suffix shown in footnote 6).

Finally we come to the four constraints which are crucial to the correct syllabification of the reversed clusters. In this group, the preference to PARSE all segments comes first, followed by the ONSET requirement, since ordering ONSET above PARSE would cause deletion of initial onsetless syllables.[9] The SONORITY statement in (20) that sonorants prefer moraic positions, along with the other Sonority Sequencing restrictions for QZ, is next, and FILL is the final constraint. (The ranking of FILL in this position correctly restricts epenthesis to nucleus epenthesis only within words.)

(20) SONORITY: Avoid $\sigma$ (|) [+son] i.e. Prefer $\mu$ (|) [+son]

The SONORITY constraint in (20) accounts for the fact that, while a sonorant may form a complex onset word initially, it will resyllabify as a coda to a final open syllable in the preceding word if possible. Whenever an onset is available, the sonorant will resyllabify to avoid a violation of SONORITY. This is shown in (21). Note that in (21a,b,&d) the sonorant is voiceless, as we will see in section 5 is required before a voiceless obstruent in the syllable onset, whereas it is voiced in (21c) since it is now syllabified as the coda.

[9] I assume here that the ONSET constraint is a strict requirement and that the ordering of the constraint within the hierarchy accounts for the word-initial or phrase-initial exceptions. This means that a condition on the constraint, such as 'except phrase-initially' used in Prince & Smolensky (1993), is unnecessary.

(21) Phrase initially or in isolation:

a. /r + se$^{?}$ed/ [R̃se$^{?}$et$^{h}$] 'HABITUAL-learn'

b. /r + ki$^{?}$iN + t/ [R̃ki$^{?}$int$^{h}$] 'HABITUAL-serve-NEG'

Phrase internally dependent upon syllabification:

c. /Ne rse$^{?}$ed/ [ner.se$^{?}$et$^{h}$] 'that HABITUAL-learn'

d. /ɓat rki$^{?}$iNt/ [ɓat.R̃ki$^{?}$int$^{h}$] 'already HABITUAL-serve-NEG'

Derivations for these forms are given at the end of section 5 to illustrate the interaction between voicing and syllabification.

The reversed clusters are only tolerated word-initially. Word-medially the sonorant can syllabify as a coda to a preceding open syllable. In cases where the preceding syllable is closed, epenthesis occurs, as verified in (22).

(22) /g$^{y}$ed + ɓze + lo/ [g$^{y}$e.deɓ.ze.lo] 'eyelid'
skin eye face

Such facts normally require positing an onset adjunction rule which can apply only word-initially. The ordering of the constraints in the hierarchy will account for the correct distribution, however, eliminating the need for the special adjunction rules, as shown in (23). Word-internally, the desire for sonorants to be in coda position can be met since the coda of the preceding syllable provides a possible onset. The SONORITY constraint is higher than FILL, so epenthesis applies to create optimal syllables. In the word-initial case, a syllable consisting of an epenthetic vowel and the sonorant coda would not have an onset. The fact that syllables require onsets overrides the desire for sonorants to be in coda position, so the reversed cluster is tolerated pending possible compounding or phrase-level resyllabification.

(23) Initial syllabification

After compounding

SONORITY violation

Resyllabification and Epenthesis

The overall ranking of constraints we have discussed for QZ is thus:

$$\textsc{syllable \& laryngeal licensing} \succ \left\{ \begin{array}{l} \textsc{wsp} \\ \textsc{ocp} \end{array} \right\} \succ \textsc{parse} \succ \textsc{onset} \succ \textsc{sonority} \succ \textsc{fill}$$

# 5 The Full Distribution of Laryngeal Features

Lombardi (1991, 1995a) accounts for the distribution of laryngeal features in a number of languages, such as Dutch, Catalan, Polish, and German, using the Laryngeal Constraint, which licenses laryngeal features only in the position immediately preceding a sonorant, and a separate spreading rule for some of the languages. This accounts for syllable final devoicing and cluster spreading. The Laryngeal Constraint and spreading rule is not operative in QZ since it has neither syllable final devoicing[10] nor cluster spreading across syllable boundaries, as shown in the compounds in (24).

(24) a. /ɓdoʒ̱ + ʃ̱til/ [ɓdoʒ̱.ʃ̱til] 'bird of prey'
b. /g$^{y}$ed + k$^{w}$es/ [g$^{y}$ed.k$^{w}$es] 'cheek'
c. /ʒ̱iz + ki$^{ʔ}$in/ [ʒ̱iz.ki$^{ʔ}$in] 'heart of a liver'

We can distinguish three processes occurring in QZ which account for the full distribution of the laryngeal features [voice] and [spread glottis]. The two processes involving [voice] conspire to fulfill the Universal Tautosyllabic Voicing Constraint (UTVC) (Harms 1973, Greenberg 1978), which says that a voiced consonant may not appear outside of a voiceless obstruent within a single syllable. (The UTVC can itself be seen to follow from Sonority Sequencing.)

First, there is a lexical process which devoices an obstruent following a fortis coronal continuant, thus neutralizing the voicing distinction as shown in (25).[11]

[10] QZ does have word-final devoicing with aspiration, however, as discussed at the end of this section.

[11] The situation is more complex for the coronal fricatives due to an antigemination restriction which causes merging of coronal continuants, but devoicing is still operative in these cases:

(25)

| | | | |
|---|---|---|---|
| a. | /s̩ + pit/ | [s̩pit$^{h}$] | 'POS-nose' |
| b. | /s + to$^{?}$o/ | [sto$^{?}$o] | 'FUTURE-sell' |
| | /s̩ + tis/ | [s̩tis] | 'POS-officials' |
| c. | /s + de$^{?}$e/ | [ste$^{?}$e] | 'FUTURE-give' |
| | /s̩ + deN/ | [s̩ten] | 'POS-ranch' |
| d. | /s + ka$^{?}$a/ | [ska$^{?}$a] | 'FUTURE-stay' |
| e. | /s + k$^{y}$e/ | [sk$^{y}$e] | 'FUTURE-roast' |
| f. | /s̩ + k$^{w}$art/ | [s̩k$^{w}$art$^{h}$] | 'POS-room' |
| g. | /s + gob/ | [skoΦ] | 'FUTURE-tighten' |
| | /s̩ + goz/ | [s̩kos] | 'POS-tail' |
| h. | /s̩ + g$^{y}$ag/ | [s̩k$^{y}$ak$^{h}$] | 'POS-water gourd' |
| i. | /s̩ + g$^{w}$ay/ | [s̩k$^{w}$aY] | 'POS-horse' |

No devoicing occurs when these prefixes are added to roots beginning with sonorants, however.

(26)

| | | | |
|---|---|---|---|
| a. | /s̩ + ma$^{?}$a/ | [s̩ma$^{?}$a] | 'POS-animal' |
| b. | /s + Nu/ | [snu] | 'FUTURE-speak' |
| | /s̩ + Niz/ | [s̩nis] | 'POS-corn' |
| c. | /s + la$^{?}$a/ | [sla?a] | 'FUTURE-do' |
| | /s̩ + lo$^{?}$o/ | [s̩lo$^{?}$o] | 'POS-corral' |
| d. | /s + ru$^{?}$u/ | [sr̃u$^{?}$u] | 'FUTURE-leave' |
| e. | /s + ba$^{?}$aN/ | [sba$^{?}$an] | 'FUTURE-rob' |
| | /s̩ + bay/ | [s̩baY] | 'POS-shawl' |

---

| | | | |
|---|---|---|---|
| (i) | /s + sac/ | [sac$^{h}$] | 'FUTURE-cover' |
| | /s̩ + sæ$^{?}$æ/ | [s̩sæ$^{?}$æ] | 'POS-dinner' |
| (ii) | /s + ze$^{?}$eb/ | [se$^{?}$eΦ] | 'FUTURE-owe' |
| | /s̩ + zaa/ | [s̩sa$^{?}$a] | 'POS-corn' |

f. /s + wi$^{?}$i/ [swi$^{?}$i] 'FUTURE-see'
/s̱ + wak/ [s̱wak$^{h}$] 'POS-cockroach'

g. /s + ya/ [sya] 'FUTURE-dance'
/s̱ + yu$^{?}$u/ [s̱yu$^{?}$u] 'POS-house'

This process could easily be expressed as a rule spreading [-voice] or [spread glottis] if the voiceless coronal continuants (or all fortis obstruents) were so marked. We can maintain the claims of both privative feature theory and underspecification theory, however, by formulating this process as simply a lexical rule in which a consonant assimilates to the voicing of a preceding obstruent within the syllable onset. As noted in Mester & Itô (1989), the classical Praguean conception of assimilation conceives of all assimilation processes as contingent upon prior neutralization (Davidsen-Nielsen 1978, Kiparsky 1985:98). With this understanding, the rule in (27) achieves both (a) neutralization of all Laryngeal specifications (only [voice] is specified) on a consonant following an obstruent within the syllable onset and (b) spreading of any laryngeal specification on the obstruent to the consonant.[12]

(27) Fortis Assimilation

a. $_{\sigma}$[ [-son] [+cons] ≠ [Lar]

b. $_{\sigma}$[ [-son] [+cons] — [Lar]

There are only four possible outcomes from this rule, as shown in (28), all of which obey the UTVC.[13]

(28) a. [-son] [-son] or [-son] [-son] (Lar) ⟹ [-son] [-son] e.g. [sk] or [s̱d] → [s̱t]

b. [-son] [-son] or [-son] [-son] ⟹ [-son] [-son] (Lar) e.g. [g$^{w}$z] or [gs] → [gz]

c. [-son] [+son] ⟹ [-son] [+son] e.g. [sr]

[12]I follow Lombardi (1991) in assuming that voiceless, unaspirated, unglottalized segments do not have any Laryngeal specification (or node) at all, since this accounts best for the neutralization facts cross-linguistically.

[13]The [Lar] for sonorants is specified by default later, so it is not shown in (28). Though there is no prefixation operation to show this as an overt process, the reflection of [gs]⟶[gz] in (28b) is meant to show that rule (27) also accounts for the lack of [gs]-type clusters in QZ.

d. [-son] [+son] ⟹ [-son] [+son] e.g. [gr]
[Lar] [Lar]

Second, in the phrase level phonology, after resyllabification to optimize syllables and after default specification of [voice] for sonorants, onset voicing agreement applies regressively (rule (31)), as shown in (29)–(30). (Capital letters indicate voicelessness.)

(29) a. /y + se$^{\text{ʔ}}$ed/ [Ise$^{\text{ʔ}}$et$^{\text{h}}$] 'POTENTIAL-learn'
/y + ga$^{\text{ʔ}}$az/ [iga$^{\text{ʔ}}$as] 'POTENTIAL-turn.black'
/ydo$^{\text{ʔ}}$o/ [ido$^{\text{ʔ}}$o] 'church building'

b. /wkit/ [Ukit$^{\text{h}}$] 'game'
/w + git/ [ugit$^{\text{h}}$] 'COMPLETIVE-play'

c. /rsil/ [R̃sil] 'morning'
/r + to$^{\text{ʔ}}$o/ [R̃to$^{\text{ʔ}}$o] 'HABITUAL-sell'
/r + da$^{\text{ʔ}}$a/ [r̃da$^{\text{ʔ}}$a] 'HABITUAL-crawl'

(30) shows that this regressive voicing agreement is crucially dependent upon syllabification. Since the /b̥/ syllabifies as the coda of the first syllable in (30b), no devoicing occurs.

(30) a. /bc̥u$^{\text{ʔ}}$uš̥/ [Φc̥u$^{\text{ʔ}}$uš̥] 'tomato'
b. /š̥ + bc̥u$^{\text{ʔ}}$uš̥/ [š̥ab.c̥u$^{\text{ʔ}}$uš̥] 'POS-tomato'

The purpose of rule (31) is to assure (a) neutralization of the [voice] specification on the sonorant and (b) agreement with the voicing of the following obstruent in the reversed onset clusters.

(31) Reversed Onset Voicing

a. σ[ [+son] [-son] b. σ[ [+son] [-son]
≠ [Lar]
[Lar]

The two possible outcomes from this rule, shown in (32), both obey the UTVC.

(32) a. [+son] [-son] ⟹ [-son] [+son] e.g. [rd]
[Lar] [Lar] [Lar]

b. [+son] [-son] $\Longrightarrow$ [-son] [+son] e.g. [Rk]
|
[Lar]

Rule (31a) can be seen as following naturally from the UTVC under Cho's (1990) formulation of the UTVC as a rule of Universal Devoicing, as given in (33).

(33) Universal Devoicing

C C
∓ [-son]
[voice]
——————→ syllable nucleus

Note that this formulation does not limit the delinking to obstruents, so the QZ syllabification rules would allow the appropriate sonorants to be devoiced. The spreading of [voice] in the direction outward from the nucleus after neutralization is also seen to be a universal process by Cho (1990), thus reducing (31) to the setting of two parameters, [cluster-devoicing] and [+spreading] under that view. Rule (27) does not follow from Universal Devoicing, however, since the neutralization and spreading in onset obstruent clusters works in the opposite direction, with the leftmost obstruent determining the voicing for the cluster. (Note that English also needs a rule such as (27), proposed as a Morpheme Structure Constraint in Halle (1962), to account for the fact that only voiceless obstruents may follow *s*.)

Finally, before pause all stops and affricates are voiceless and aspirated, and all continuants and approximants are voiceless.[14] This can be analyzed as the insertion of the feature [spread glottis] on the final segment before pause (analyzed as the Intonational Phrase level), as shown in (34), where I again assume that neutralization of any existing Laryngeal specification occurs first.

(34) [spread glottis] Insertion

[+cons] ]$_{IntonationalPhrase}$
|
[Lar]
|
[ spread ]
[ glottis ]

[14]QZ thus seems close to being a language that has word-final (or phrase-final) devoicing but not syllable-final devoicing, which Lombardi (1991, 1995a:69) predicts does not exist. I noted earlier that the Laryngeal Constraint Lombardi proposes is not operative in QZ. Due to the presence of aspiration on phrase-final obstruents, I analyze the QZ process as insertion of [spread glottis] rather than as neutralization of [voice].

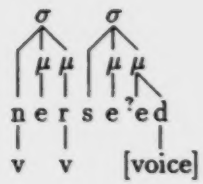
The phonological rules of Fortis Assimilation (27), Reversed Onset Voicing (31), and [spread glottis] Insertion (34) apply subject to the constraint hierarchy; for example, the rule of [spread glottis] Insertion will not apply to nasals, since they separately license [voice].

Derivations of the forms cited earlier in (21c–d) will be given here to illustrate how voicing and syllabification interact. (35) gives the derivation of (21c) where phrasal resyllabification occurs.[15]

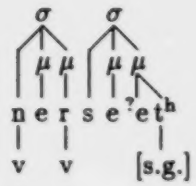
(35) /Ne rseʔed/ [ner.seʔetʰ] 'that HABITUAL-learn'

Initial syllabification through lexical phonology

Phrase level resyllabification and default voicing




[spread glottis] insertion




This contrasts with the derivation for (21d), given in (36), where resyllabification is not possible; therefore, the reversed cluster remains tautosyllabic, and onset voicing agreement (rule (31)) applies.

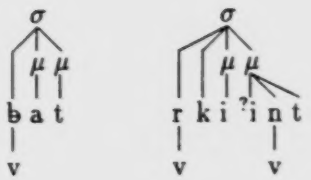
(36) /ɓat rkiʔiNt/ [ɓat.R̃kiʔintʰ] 'already HABITUAL-serve-NEG'

[15]Default specification of [voice] for sonorants is shown as 'v' in derivations (35) and (36). The [constricted glottis] feature of the interrupted vowels is not relevant, so it is not shown. In derivation (35), neither Fortis Assimilation nor Reversed Onset Voicing are applicable. Likewise, Fortis Assimilation is not applicable in derivation (36).

Initial syllabification through lexical phonology

No phrase level resyllabification

Default voicing




Universal devoicing

[spread glottis] insertion

Considering the fact that Fortis Assimilation and Reversed Onset Voicing conspire to force compliance with the UTVC, it may be possible to reformulate these rules to fit into the constraint hierarchy as well, though the exact formulation is not clear. The insertion of [spread glottis] could be reformulated as a licensing constraint rather than an insertion rule; then a violation of FILL would allow the Laryngeal node with the feature [spread glottis] to be added where required by the licensing. If these moves were made, all the 'rules' operable in QZ could be part of the constraint hierarchy as proposed in Optimality Theory (Prince & Smolensky 1993 and McCarthy & Prince 1993).

Optimality Theory assumes a non-derivational view, with the hierarchy of constraints determining the optimal surface form (and prosodic structure) from a set of candidates. Due to the resyllabification and constraints which apply to higher levels of prosodic structure, this non-derivational view of QZ phonology would require the candidates to be parsed into Intonational Phrase units, rather than considering single words, causing the size of each candidate to be considered as well as the size of the candidate set itself to be greatly multiplied. For this reason, as well as the reluctance to throw away the results established in derivational models of phonology, I prefer to view the hierarchy of constraints as applying throughout a derivational phonology. Such a theory is formalized as Constraint-Ranked Derivation by H.A.Black (1993).

# 6 Conclusion

The three privative laryngeal features, [voice], [spread glottis], and [constricted glottis], are thus utilized in QZ, with special licensing constraints on each one. These constraints, coupled with a ranking of the universal constraints on prosodic structure, serve to correctly limit the syllable shapes allowed in QZ. At the same time, they mark the reversed onset clusters as disfavored both language internally and universally.

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# A Grammar Sketch of the Kaki Ae Language*

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*Kaki Ae is a non-Austronesian language spoken by approximately 300 people on the south coast of Papua New Guinea. It is at best distantly related to any other language in Papua New Guinea. This paper presents a brief grammar sketch of the language, including discussion of the phonology, sentences, phrases, words, and morpheme categories. Three appendices include a Kaki Ae to English Lexicon, an English to Kaki Ae word finder list, and seven short texts.*

## 1. Introduction

The Kaki Ae language is spoken by approximately 300 people living along the south coast of Papua New Guinea in six villages southeast of Kerema Gulf Province of Papua New Guinea. There is minimal variation between the different villages. Brown (1973) refers to the language by the Toaripi designation Raepa Tati, or 'Hill Tati'. The people have no generally recognised name for their language, but many dislike the designation Tati since they feel it refers to 'bush people' in Toaripi. In fact, the phone [t] is nonexistent in Kaki Ae. The concensus of the speakers I worked with was that the language should be called Kaki Ae, from *kaki*, a modified form of [tati], and *ae* 'language'.[1]

Kaki Ae is surrounded by Kamea, Akoye,[2] Keuru, Opau, Tairuma,[3] and the Kaipi dialect of Toaripi. The first two are members of the Angan language family, while the others are members of the Eleman language family. All have considerably more speakers than does Kaki Ae.Wurm and Hattori (1981) classify Kaki Ae as a family-level isolate in the Eleman stock, apparently based on the word lists reported by Brown (1973). This classification follows Brown's statement that, 'My investigations suggest that Raepa Tati has its nearest affinity with the Eleman language family.' (p. 286)

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[1]Grimes (1992) lists the name of the language as Tate, with the code TBD. Alternate names listed are Raepa Tati, Tati, Lorabada, and Lou.

[2]Lloyd (1973) refers to Kamea as Kapau and Akoye as Lohiki; Wurm and Hattori (1981) refer to Kamea as Hamtai.

[3]Tairuma is referred to as Uaripi by Brown.

Brown does not report any percentages of similar forms, but my analysis of the data reported results in percentages between 14% and 17%. Most of the similar forms, however, are almost identical. This suggests that the similarities may be due to borrowing, not genetic relationship. The borrowing hypothesis is supported by the fact that in several instances Kaki Ae speakers can identify a form reported by Brown as a borrowed form and give the 'true' Kaki Ae form. For example, I was told the true Kaki Ae form for 'louse' is /amuri/, not /saruta/ (cf. Kaipi /sarutʃa/); 'bark (of tree)' is /βɛra?a/, not /ruru/ (cf. Kaipi /ruru/[4]); 'sand' is /fae/, not /kekene/[5] (cf. Kaipi /kekere/). Thus, I believe the claim that Kaki Ae is related to the Eleman languages is questionable even at the stock level.

## 2. Phonology

The phonemic inventory of Kaki Ae includes the eleven consonants and ten vowels shown in Table 1.

**Table 1: Phonemes of Kaki Ae**

| | | | | | |
|---|---|---|---|---|---|
| p | | k | ʔ | i ī | u ū |
| m | n | | | | o ō |
| ɸ β | s | | h | ɛ ɛ̄ | |
| | l | | | | ɑ ɑ̄ |
| w | | | | | |

Stress is always penultimate.

There are no closed syllables or syllable initial consonant clusters. Therefore all consonants may occur in only two positions: word-initially and intervocalically. Most consonants may occur in both positions, the possible exceptions being /ʔ/ and /w/. The situation for /w/ is discussed with vowel sequences. Regarding /ʔ/, I have found no evidence for a word-initial contrast between /ʔV/ and /V/. There is, however, contrast between these sequences morpheme-initially in the following forms.

| | |
|---|---|
| /ɛlɛɑ-ʔɛ-ʔɛnɑ/ | 'I see you (sg)' |
| /ɛlɛɑ-ɛ-ʔɛnɑ/ | 'I see you (pl)/them' |

Therefore it is not unreasonable to expect that a contrast between /ʔV/ and /V/ may well be found in word-initial position.

There is allophonic variation for two of the consonant phonemes. The phoneme /l/ varies between [l] and [d] word-initially, and between [l] and [ɾ] intervocalically, as shown in the following forms.

| | | |
|---|---|---|
| /ɑlɛ/ | [ɑ.ɾɛ ~ dɑ.ɾɛ ~ dɑ.lɛ] | 'sun' |
| /ɑlo/ | [ɑ.ɾo ~ ɑ.lo] | 'head' |

When intervocalic /l/ is realised as [l], word-initial /l/ is realised as [ɾ], that is, /lɑɾɛ/ cannot be realised as *[lɑ.lɛ].

[4]/βɛra?a/ (recorded by Brown as /mera?a/) is the general word for 'skin' in Kaki Ae; /ruru/ is the general word for 'skin' in Kaipi.

[5]Brown gives /fae fo?olo/ as an alternate form for 'sand'.

The phoneme /β/ varies between [b] and [m] word-initially, and between [β] and [v] intervocalically, as shown in the following forms.

| | | |
|---|---|---|
| /βɛrɑʔɑ/ | [bɛ.rɑ.ʔɑ ~ mɛ.rɑ.ʔɑ] | 'skin' |
| /ɛβɛrɑ/ | [ɛ.βɛ.rɑ ~ ɛ.vɛ.rɑ] | 'dog' |

The contrast between nasal and oral vowels is clear after oral consonants as shown in the following examples.

| | | | |
|---|---|---|---|
| /ɑo/ | 'you' | vs. /ɑ̃ʔo/ | 'a swamp' |
| /ɑʔo/ | 'ladle' | vs. /ɑ̃ʔõ/ | 'large bilum' |
| /ɛɑmɑ/ | 'bird sp.' | vs. /ɛ̃ɑ/ | 'house' |
| /ɛhɛ/ | 'that' | vs. /ɛ̃hɛ̃/ | 'yes' |
| /ɛʔɛlo/ | 'white' | vs. /ɛ̃ʔɛ̃/ | 'coconut' |
| /iʔi/ | 'piece of food' | vs. /ĩʔĩhɑ/ | 'to burn' |
| /oʔɛkɑ/ | 'to make' | vs. /õʔɛ̃hɑ/ | 'to try to do' |
| /oʔiɑmuhɑ/ | 'to put' | vs. /oʔĩ/ | 'to say' |
| /uʔuli/ | 'centipede' | vs. /ũʔũkɑ/ | 'two' |

After nasal consonants there does not seem to be a distinction; all vowels seem to be nasalised. Most sequences of vowels are all oral. The only sequence of nasal vowels found thus far is in /ɑ̃ɛ̃ʔɑ/ 'that'. The following words with sequences of nasal vowel followed by oral vowel have been found.

| | |
|---|---|
| /ɑ̃oʔɑ/ | 'swamp' |
| /ɛ̃ɑ/ | 'house' |
| /ɛ̃ɑʔɑ/ | 'that's all' |
| /ɛ̃ɑʔĩʔɑ/ | 'same' |
| /nɛʔũɑ/ | '1st plural object agreement suffix' |
| /ũɑ/ | 'to put into' |
| /ũɑni ~ ũɑʔi/ | 'someone' |

The sequence /ɑ̃o/ is a diphthong; all other sequences are across syllable boundaries. No monomorphemic forms with sequences of oral followed by nasal vowels have been found, although such sequences have been found across morpheme boundaries in words like /ɛrɛ-ɑmu-hɛ-ɑ̃ʔɛ/ 'did you see it?'. The sequence /ɛɑ̃/ is also across syllable boundaries.

No long vowels have been found. Eight diphthongs have been found: /ɛi ɛu ɑɛ ɑi ɑu ɑo oi ou/. The diphthong /ɛi/ is realised as phonetic [ei]. Examples are given in Table 2 for all eight diphthongs in five environments whenever possible: word-initial, between consonants, word-final, before a vowel, and after a vowel.

**Table 2: Diphthongs in Kaki Ae**

| | | | | | | |
|---|---|---|---|---|---|---|
| ɛi | /ɛisi/ | 'banana' | /mɛimɑ/ | 'hornbill' | /βɛiβɛi/ | 'long' |
| ɛu | | | /lɛuhɑ/ | 'to go around' | | |
| ɑɛ | /ɑɛnɑ/ | 'betelnut' | /nɑɛlo/ | 'who?' | /ɸɑɛ/ | 'sand' |
| | /ɛnɑɛɑ/ | 'to buy' | | | | |
| ɑi | /ɑipalo/ | 'pig' | /ɸɑiʔɑɸɑiʔɑ/ | 'wet' | /ɑpɑɛ/ | 'young' |
| | /ɑiɛʔi/ | 'fire' | | | | |
| ɑu | /ɑuʔihɑ/ | 'to say' | /ɸɑulɑ/ | 'garden' | /mɛhɑu/ | 'heavy' |
| | /ɑuɑlɛ/ | 'spider' | | | | |
| ɑo | /ɑolɑkɑ/ | 'make (canoe)' | /kɑolɑ/ | 'unripe' | /nɑo/ | 'I' |

| | | | | | | |
|---|---|---|---|---|---|---|
| oi | | | /koiʔɑlɑ/ | 'another' | /βoi/ | 'spear' |
| ou | /oulɑhɑ/ | 'to remove' | /lɛouhɑ/ | 'to swim' | | |

In addition to these diphthongs, the following eleven sequences of vowels occurring across syllable boundaries have been found: /ɛo ɛɑ oɛ oɑ io iɛ iɑ ui uɛ uo uɑ/. The only sequence not found is /iu/. Examples are given in Table 3 for all eleven sequences in as many of the same environments as for diphthongs as possible for each sequence.

**Table 3: Vowel Sequences across Syllable Boundaries**

| | | | | | | |
|---|---|---|---|---|---|---|
| ɛo | /lɛou/ | 'to swim' | | | | |
| ɛɑ | /ɛɑmɑ/ | 'bird sp.' | /βɛɑʔɛ/ | 'cockatoo' | /ɸɛlɛɑ/ | 'to jump' |
| | | | /ɛnɑɛɑ/ | 'to buy' | | |
| oɛ | /oɛlɑ/ | 'new' | /moɛɑ/ | 'old' | /noɛ/ | 'nose' |
| oɑ | | | /koɑlɛ/ | 'a trip' | /ɸoɑ/ | 'vine type' |
| io | | | /siolo/ | 'dry season' | /ɑio/ | 'clay pot' |
| iɛ | /iɛ/ | 'green parrot' | /ɑiɛʔi/ | 'fire' | | |
| iɑ | /siɑhu/ | 'power' | /siɑ/ | 'okari tree' | /ɸɑiɑ/ | 'arrow type' |
| ui | /ɸuiɑ/ | 'moon' | | | | |
| uɛ | | | /hɑʔuɛhumo/ | 'to cough' | /muɛ/ | 'to return' |
| uo | /uo/ | 'mountain' | | | | |
| uɑ | /ũɑhɑ/ | 'he put it into' | /ɸuɑni/ | 'seed' | /lɑluɑ/ | 'cassowary' |
| | | | /ɑuɑlɛ/ | 'spider' | | |

A comparison of the sequences in Table 2 with those in Table 3 shows that syllabification of vowel sequences is predictable. Sequences are always realised as one syllable (that is, they are diphthongs) if the second vowel is higher than the first. They are two syllables if the first vowel is higher than the second or if the two vowels are equal in height.

Sequences of three vowels generally also follow these principles of syllabification. A word like /ɸɑiɑ/ [ɸɑi.ɑ] 'arrow type' syllabifies as two syllables. Since the second vowel is higher than the first or third vowel it syllabifies with the first vowel and forms a separate syllable from the third vowel. A word like /moɛɑ/ [mo.ɛ.ɑ] 'old', on the other hand, syllabifies as three syllables since the second vowel is equal in height to the first vowel and higher than the third. Thus it forms a separate syllable from either the first or third vowel.

In this context the questionable nature of the phonemic status of /w/ can be discussed. There are apparent contrasts between /w/ and /u/ as shown in the following example.

| | |
|---|---|
| /wɑrɛhɑvɑ/ | 'first' |
| /ũɑhɑ/ | 'put into something' |

However, such contrasts are rare and only in initial position. In fact, only two words have been found with initial /w/, one of which alternates with /u/ (/wãʔĩ/ [wã.ʔĩ ~ u.ã.ʔĩ] 'to go down'). The one phonetic occurrence of word-medial [w] is in /ɸuiɑ/ [ɸu.i.ɑ ~ ɸwi.ɑ] 'moon'.

There do not seem to be widespread morphophonemics in evidence. There are modifications in the pronouns, especially in the diphthongs, that are outlined in section 6.3. There is also general reduction of sequences of identical vowels across morpheme boundaries. For example,

[ɛɾɛamu?ɛnɑ] 'I see it' is derived from /ɛlɛɑ-ɑmu-?ɛnɑ/ (cf. [ɛɾɛɑ?ɛ?ɛnɑ] < /ɛlɛɑ-?ɛ-?ɛnɑ/ 'I see you', [ɑɾiɑmu?ɛnɑ] < /ɑli-ɑmu-?ɛnɑ/ 'I throw it', and [ɑɾi?ɛ?ɛnɑ] < /ɑli-?ɛ-?ɛnɑ/ 'I throw you'). When the second vowel in the sequence is nasal, the remaining vowel is also nasal as in [ɑβɑhã?ɛ] < /ɑβɑ-hɑ-ã?ɛ/ 'did he go up?'. Finally, /?/ is deleted after a consonant across a morpheme boundary as in [ɑmɑmɛnu] < /ɑmɑ-m-?ɛnu/ 'I hit it'. This is easily explained in terms of the general constraint against consonant clusters.

## 3. Sentences

Sentences in Kaki Ae can be categorised as simple, complex, or compound. Simple sentences contain only one clause, while complex and compound sentences contain more than one clause.

### *3.1 Simple Sentences*

There are two types of simple sentences: verbal and nonverbal.

#### *3.1.1 Verbal Sentences*

Verbal simple sentences contain verbs. The basic form of a verbal sentence is given in (1).

(1) $NP_{subj}$ ($NP_{obj1}$ ($NP_{obj2}$)) V

That is, a verbal sentence consists of a subject noun phrase followed by one or two optional object noun phrases, followed by a verb. In addition, various adverbial words or phrases can occur between any of these major constituents.

Verbal sentences can be classified as intransitive, transitive, or ditransitive, depending on how many object noun phrases can be present. Sentences which cannot contain an object noun phrase, as shown in (2), are intransitive.

(2) Nao Kereva-ma wä'ĩ-'ena.[6]
1s Kerema-LOC go.down-1sS

'I'm going down to Kerema.'

Sentences which may contain only one object noun phrase, as shown in (3-6), are transitive.

(3) Aiparo-ro nao erea-ne-ha.
pig-ERG 1s see-1sO-3sS

'The pig sees me.'

(4) Erahe aiparo ere-amu-'ani.
3p pig see-3sO-2/3pS

'They see the pig.'

---

[6]The orthography used in the examples is as follows: oral vowels /ɑ ɛ i o u/ are ⟨a e i o u⟩, nasal vowels /ɑ̃ ɛ̃ ĩ õ ũ/ are ⟨ä ë ï ö ü⟩, consonants /p k ʔ m n ɸ β s h w/ are ⟨p k ' m n f v s h w⟩, the consonant /l/ is ⟨l⟩ word-initially and ⟨r⟩ word-medially. The following abbreviations are used in glosses:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CONT | continuous | IRR | irrealis | PL | plural | Q | question |
| ERG | ergative | LOC | locative | POSS | possessive | RDP | reduplication |
| IMP | imperative | NEG | negative | | | | |

Pronouns are indicated by a combination of 1, 2, or 3 to indicate person and s or p to indicate number; verbal agreement suffixes have an additional S or O to indicate agreement with subject or object.

(5) Era nao faha-ma o'i-ne-ha.
3s 1s table-LOC put-1sO-3sS

'He put me on the table.'

(6) Era hau'ani akiva-ma asi-amu-ha.
3s sweet.potato knife-LOC cut-3sO-3sS

'He cut the sweet potato with a knife.'

Sentences which may contain two object noun phrases, as shown in (7), are ditransitive.

(7) Nu-ro evera mono ini-amu-'ena.
1p-ERG dog boy give-3sO-1pS

'We gave the dog to the boy.'

When the subject is a noun phrase (as opposed to a pronoun), a referential pronoun frequently follows.

(8) Kurokuro erahe oharo moha ve'i-'ani...
cuscus 3p tree ? sit-2/3pS

'Cuscus sit in trees...'

Time adverbials can occur sentence-initially, sentence-finally, or between the subject and verb.

(9) a. Lafi aru ona-ha.
yesterday man go-3sS

'Yesterday the man went.'

b. Aru lafi ona-ha.
man yesterday go-3sS

'Yesterday the man went.'

c. Aru ona-ha lafi.
man go-3sS yesterday

'Yesterday the man went.'

Locative adverbials can occur sentence-finally or between the subject and verb, as shown by (2) and (10).

(10) Nao wã'ĩ-'ena Kereva-ma.
1s go.down-1sS Kerema-LOC

'I am going down to Kerema.'

I have labeled the affix *-ro* in (3, 7) as an ergative marker. It is true that it occurs only on subjects of transitive verbs. However, it does not occur on all subjects of transitive verbs, as shown in (4-6). As in many other PNG languages, it seems to occur most commonly where there is potential ambiguity as to which noun phrase is the subject. No object in either transitive or ditransitive sentences receives any morphological marking.

As shown in the above examples, verbs take suffixes agreeing in person and number with the subject and object noun phrases. In ditransitive sentences the verb agrees in person and number with the semantic recipient, not the semantic patient.

(11) Erahe aiparo himiri nao ne-ni-'ani.
3p pig many 1s give-1sO-3pS

'They gave many pigs to me.'

If there is no overt subject or object noun phrase, the verb will still take suffixes agreeing with the understood subject, as in (12), or with the understood object, as in (13).

(12) Noa-'au, eisi lire-'au, hau'ani ore-'au, o'i-m-'enu.
taro-PL banana sucker-PL sweet.potato leaf-PL put-?-1pS

'We plant taro, banana suckers, and sweet potato leaves.'

(13) Aiparo-ro erea-ne-ha.
pig-ERG see-1sO-3sS

'The pig sees me.'

As shown in (13), the subject of a transitive sentence can also be marked with the ergative marker *-ro*, even if the object is not overt.

Most verbs may be used only intransitively or transitively. Some verbs, however, can be used intransitively or transitively; one such verb is *ara* 'to burn'. When *ara* is used intransitively, as in (14a), it takes no object agreement suffix, and the subject cannot take the ergative suffix. When it is used transitively, as in (14b), it takes an object agreement suffix and the subject may take the ergative suffix.

(14) a. Aie'i ara-ha.
fire burn-3sS

'The fire is burning.'

b. Aie'i-ro ẽa ar-amu-ha.
fire-ERG house burn-3sO-3sS

'The fire is burning the house.'

The verb *ehera* 'to be hungry' never takes an overt subject, although it always takes the third singular subject agreement affix. It also takes object agreement affixes agreeing in person and number with the one overt noun phrase.

(15) a. Nao ehera-ne-ha.
1s hungry-1sO-3sS

'I am hungry.'

b. Ofe ehera-e-ha.
2p hungry-2/3pO-3sS

'You (pl) are hungry.'

The morpheme *ehera* can also be used as a noun, as discussed in section 5.1.

Two slightly different constructions are used for negative statements following the basic distinction in the language between realis and irrealis. (See section 5.1 for a discussion of the realis/irrealis distinction.) In both constructions the verb is in the irrealis mood. If the corresponding positive statement is in the realis mood, the negative morpheme *ore* is used, as shown in (16-17).

(16) a. Aru era ma-ha.
man 3s come-3sS

'The man came.'

b. Aru ore ma-na-ra.
man NEG come-?-IRR

'The man did not come.'

(17) a. Nao era koarai-amu-'ena.
1s 3s help-3sO-1sS

'I am helping him.'

b. Nao era ore koarai-amu-ra.
1s 3s NEG help-3sO-IRR

'I am not helping him.'

The negative morpheme *ore* can occur before or after the object, as shown in (18).

(18) a. Era ore evera ama-amu-ra.
3s NEG dog hit-3sO-IRR

'He did not hit the dog.'

b. Era evera ore ama-amu-ra.
3s dog NEG hit-3sO-IRR

'He did not hit the dog.'

If the corresponding negative statement is in the irrealis mood, the negative morpheme *one* is used, as shown in (19).

(19) a. Pani'ira aru era ma-na-ra-ha.
tomorrow man 3s come-?-IRR-3sS

'Tomorrow a man will come.'

b. Aru one ma-na-ra-ha.
man NEG come-?-IRR-3sS

'The man will not come.'

The differences in the internal constituency of the verb itself are discussed in section 5.1.

Commands are marked by verbal morphology. Generally the second person subject is not specified. Otherwise, imperative sentences are not differentiated from declarative sentences. Verbs in negative commands are also in the irrealis mood, but the negative morpheme *vaika* is used.

(20) a. On-e!
go-IMP

'Go!'

b. Vaika ona-ra!
don't go-IRR

'Don't go!'

### *3.1.2 Verbless Sentences*

The basic form of verbless sentences is given in (21).

(21) $NP_{subj}$ Complement

The subject may be any noun phrase, including a simple noun or pronoun. The complement may be a noun phrase as in (22-23), an adjective as in (24-25), or an adverbial as in (26-27).

(22) Era ava'ivori.
3s old.man

'He is an old man.'

(23) Ë'a aiparo.
that pig

'That is a pig.'

(24) Ehe aiparo era hi'ivira.
that pig 3s big

'That pig is big.'

(25) No-vere napara era ahara-fe ü'üka.
1s-POSS father 3s brother-PL two

'My father has two brothers./My father's brothers are two.'

(26) Aiparo faura-ma.
pig garden-LOC

'A pig is in the house.'

(27) Aiparo era vehe.
pig 3s yonder

'The pig is over there.'

As with verbal sentences, anaphoric pronouns frequently follow subject noun phrases as in (24, 25, 26).

Negative verbless sentences are constructed according to the formula in (21), with the addition of sentence-final *ore'ea* 'nothing', as shown in (28-30).

(28) Ë'a aru ore-'ea.
that man NEG-thing

'That's not a man.'

(29) a. Aiparo ĕa (lue) ore-'ea.
pig house in NEG-thing

'A pig is not in the house.'

b. Aiparo ĕa fe'u ore-'ea.
pig house under NEG-thing

'The pig is not under the house.'

(30) No-vere napara era ahara-fe ü'üka ore-'ea.
1s-POSS father 3s brother-PL two NEG-thing

'My father does not have two brothers.'

### *3.1.3 Questions*

There are two types of questions: yes-no questions and information questions. There are two constructions for yes-no questions, one for verbal sentences and one for verbless sentences. In the case of verbal sentences the suffix *-ä'e* is added to the verb, as in (31-33).

(31) Ofe Kereva-ma wä'ĭ-'ani-ä'e?
2p Kerema-LOC go.down-2/3pS-Q

'Are you (pl) going down to Kerema?'

(32) Era mao-h-ä'e?
3s dance-3sS-Q

'Is he dancing?'

(33) Ao aiparo ere-amu-he-ä'e?
2s pig see-3sO-2sS-Q

'Did you see the pig?'

In the case of verbless sentences the morpheme *ä* is added in sentence-initial position, as in (34-35).

(34) Ä ne'e aiparo?
Q this pig

'Is this a pig?'

(35) Ä ë'a aiparo ëa lue-ma?
Q that pig house in-LOC

'Is that a pig in the house?'

There is a class of quality verbs that forms questions with initial *ä* instead of with the suffix *-ä'e*.

(36) Ä ë'a ara'a ho'u-ha?
Q that canoe break-3sS

'Is that canoe broken?'

Content questions are formed by filling one of the positions in a sentence with an interrogative pronoun. This is true for both verbal sentences, as shown in (37-40), and verbless sentences, as shown in (41-43). The interrogative pronoun can fill a noun position, as in (37-38, 41-42), or an adverbial position, as in (39-40, 43).

(37) Naero ona-ra-ha Kereva-ma?
who go-IRR-3sS Kerema-LOC

'Who is going to Kerema?'

(38) Era ena'i fa'ari-ma üa-ha?
3s what string.bag-LOC put-3sS

'What did he put in the string bag?'

(39) Ao ka'a-ma ona-ra-veha?
2s where-LOC go-IRR-?

'Where are you going?'

(40) Ao enaha'u ona-ra-veha Kereva-ma?
2s when go-IRR-? Kerema-LOC

'When are you going to Kerema?'

(41) Ë'a naero ëa-ma?
that who house-LOC

'Who is in the house?'

(42) Ë'a enena'i-ro ëa-ma?
that what-ERG house-LOC

'What is in the house?'

(43) Enaha'u aiparo ĕa lue-ma?
when pig house in-LOC

'When was the pig in the house?'

Sometimes the normal yes-no question suffix *-ä'e* is also added to verbs in content questions.

(44) Era ena'i ere-amu-h-ä'e?
3s what see-3sO-3sS-Q

'What did he see?'

(45) Ao ka'a-ma aena o'i-he-ä'e?
2s where-LOC betelnut put-2sS-Q

'Where did you put the betelnut?'

(46) Aiparo ka'a-m-ä'e?
pig where-LOC-Q

'Where is the pig?'

### *3.2 Conjoined and Complex Sentences*

Conjoined and complex sentences consist of more than one clause. This discussion of compound and complex sentences is tentative; it does not even account for many of the sentences in the texts which accompany this grammatical sketch. Many of the observations made in this discussion are made on the basis of elicited sentences, although most of the structures discussed also occur in the texts.

In many cases the two clauses are simply juxtaposed, with no conjunction, as in (47-53).

(47) Ara'a ho'u-ha era feha-ha.
canoe break-3sS 3s spoil-3sS

'The canoe broke, it's spoiled/no good.'

(48) Ara'a ho'u-ha, era a-'a feha-mo-ha.
canoe break-3sS 3s make-3sO spoil-?-3sS

'The canoe broke, he made it and it got spoiled.'

(49) Ara'a era ore ho'u-ra, era namaia.
canoe 3s NEG break-IRR 3s good

'The canoe is not broken, it's good.'

(50) Aru-ro ara'a ama ho'u-mo-ha.
man-ERG canoe hit break-?-3sS

'The man hit the canoe and broke it.'

(51) Ao ma-na aiparo ere-amu-he-ä'e?
2s come-? pig see-3sO-2sS-Q

'Did you come and see the pig?'

(52) Ona lo'u-ma, hina-m-enu narakau ne-i-enu.
go village-LOC arrive-?-1p food eat-?-1pS

'Going to the village, we will arrive and eat.'

(53) Aru evera am-amu-ha evera ona-ha.
man dog hit-3sO-3sS dog go-3sS

'The man hit the dog, and the dog went.'

Juxtaposition is also used for adversative and comparative sentences. In these sentences there is some point of opposition between the two clauses: in (54-55) the first clause is positive while the second is negative; in (56) the first clause is irrealis while the second is realis; and in the comparative (57) there is opposition between the adjectives *hi'ivira* 'big' and *paka'u* 'small'.

(54) Evera-ro no-vere aiparo au-ha, oki-'a o-vere ore-'ea.
dog-ERG 1s-POSS pig kill-3sS one-? 2s-POSS NEG-thing

'The dog killed my pig but not yours.'

(55) Nao epa-ma ona-ena oki-'a ao ore ona-ra.
1s bush-LOC go-1s one-? 2s NEG go-IRR

'I went to the bush, but you didn't go.'

(56) Nu'u aiparo au-ra-veha ð'ë-'enu-ma li'o-ha.
1p pig kill-IRR-when try-1pS-when run.away-3sS

'We tried to kill the pig, but it ran away.'

(57) No-vere aiparo era hi'ivira, era-vere aiparo paka'u.
1s-POSS pig 3s big 3s-POSS pig small

'My pig is big, his pig is small./My pig is bigger than his.'

The conjunctions *pe* 'and' and *kape* 'and' are used to show sequential action, as shown in (58-63). The subject agreement marker is optional on the first verb when the subject of the two clauses is identical.

(58) Aru evera am-amu kape ona-ha.
man dog hit-3sO and go-3sS

'The man hit the dog and went.'

(59) Aru aiparo amu kape na-ha.
man pig get:3sO and eat-3sS

'The man got the pig and ate it.'

(60) Amu-'e-pe faha-ma o'i-amu-e!
get:3sO-IMP-and platform-LOC put-3sO-IMP

'Get it and put it on the table!'

(61) Nu'u amu-'enu-pe faha-ma o'i-amu-'enu.
1p 3sO-1p-and platform-LOC put-3sO-1p

'We got it and put it on the table.'

(62) Ona aiparo ere-amu-e-pe ma-n-e.
go pig see-3sO-IMP-and come-?-IMP

'Go see the pig and come back.'

(63) Era Kereva-ma ona-kape narakau enaea-ha.
3s Kerema-LOC go-and food buy-3sS

'He went to Kerema and bought food.'

The conjunction *o* 'or' is used for alternative sentences, as in (64-65).

(64) Ao Kereva-ma ona-ra o lo'u-ma ve'i-ra?
2s Kerema-LOC go-IRR or village-LOC sit-IRR

'Are you going to Kerema or staying in the village?'

(65) Ao Kereva-ma ma'i-ra o ore-'ea?
2s Kerema-LOC go.down-IRR or NEG-thing

'Are you going down to Kerema or not?'

Reason-result sentences consist of two juxtaposed clauses. The reason clause begins with *ipi* 'reason/because'. Either of the two clauses may come first as shown in (66), but when the reason clause comes first as in (66b) it is marked by a sharp rise in intonation at the end of the clause. There is no such intonational marking when the result clause is first, as in (66a).

(66) a. Era narakau one na-ra-ha ipi era eka-ka.
3s food NEG eat-IRR-3sS reason 3s sick-3sS

'He cannot eat because he is sick.'

b. Ipi era eka-ka, era narakau one na-ra-ha.
reason 3s sick-3sS 3s food NEG eat-IRR-3sS

'Because he is sick, he cannot eat.'

Time clauses are marked by the locative suffix *-ma* as in (67-70). Since *-ma* normally occurs with noun phrases (see section 4.2.1), this analysis claims time clauses are treated as nominalisations.

(67) Aru ona-ha-ma mono evera am-amu-ha.
man go-3sS-LOC boy dog hit-3sO-3sS

'When the man went, the boy hit the dog.'

(68) Napara-ro sia-ne-ha-ma ona-'ena.
father-ERG send-1sO-3sS-LOC go-1sS

'When father sent me I went.'

(69) Era-ro mini la'i-ha-ma isi-ha.
3s-ERG bird shoot-3sS-LOC fall-3sS

'When he shot the bird it fell.'

(70) Era-ro ma-na-ra-ha-ma nao aika'u haua-nana.
3s-ERG come-?-IRR-3sS-LOC 1s now afraid-?

'When he comes, I will be afraid.'

When the event referred to in the time clause has not yet occurred, as in (70), the verb is in the irrealis mood.

Contrary-to-fact conditional clauses begin with *ape* 'for' and end with the conjunction *lo'erama*, as shown in (71-72). I am analysing the final *-ma* of *lo'erama* as the locative suffix; I am treating conditional clauses, like time clauses, as nominalisations.

(71) Ape nao lare li'i lo'era-ma, nao kivi-'ena-pe-ra-ra.
for 1s day remaining then-LOC 1s work-1sS-and-IRR-IRR

'If I had time, I would have done it.'

(72) Ape era-ro one ma-na lo'era-ma, aiparo ere-amu-kape-ra-ra.
for 3s-ERG NEG come-? then-LOC pig see-3sO-and-IRR-IRR

'If he would have come, he would have seen the pig.'

Some verbs take sentential objects. One such verb is *ore* 'to know', as illustrated in (73).

(73) a. Era ore-ha kere'a-ma ona-ra-ha.
3s know-3sS path-LOC go-IRR-3sS

'He knows where to go.'

b. Nao ore-'ena kere'a-ma ona-nao.
1s know-1sS path-LOC go-1s

'I know where to go.'

## 4. Phrases

Three types of phrases are described in this section: noun phrases, adverb phrases, and intensifier phrases.

### *4.1 Noun Phrases*

Common noun phrases have the structure in (74).

(74) (Demonstrative)(Place)(Noun) Noun (Adjective)(Numeral)(Limiter)

'Place' refers to a nationality, village, or ethnic group, as illustrated in (75-76).

(75) ripi aru 'Toaripi man'
Uriri aru'u 'Uriri leaders'
Lau aru 'European man' (< *lau* 'axe')

(76)

| Dem | Place | Noun | Adj | Num |
|---|---|---|---|---|
| ë'a | Uriri | aru-'u | vori-vori | ü'üka |
| that | Uriri | man-PL | big-PL | two |

'those two Uriri leaders'

Other examples of adjectives of quality are given in (77).

(77) aru hi'ivira 'big man'
evera paka'u 'small dog'

Noun-noun constructions are used in two ways. First, as illustrated in (78), the first noun can function as an adjective, specifying a quality of the head noun. Second, as illustrated in (79), the construction can be a partitive construction in which the first noun indicates the whole and the second noun indicates the part. Structurally there is no difference between these two uses of noun-noun constructions.

(78) aiparo narakau 'pig food'
lo'u evera 'village dog'

(79) oharo ore 'tree'
aro u'umo 'head hair'

The only limiter is *uma'i* which has the sense of 'the very' or 'exactly' as illustrated in (80).

(80) pani'ira uma'i 'just tomorrow'
aiparo uma'i 'the very pig'

Possessive noun phrases have the structure in (81).

(81) $NP_{Possessor}$ *vere* $NP_{Possessed}$

Generally the possessor is a concrete entity as in (82a,d,e), but the possessor can be abstract, as in (82b,c). A possessive noun phrase can also be embedded as the possessed noun phrase in a larger possessive noun phrase, as illustrated in (82e). A possessive noun phrase may also be the noun phrase in an adverbial phrase, as in (82d).

(82) a. mono vere aiparo 'the boy's pig'
b. ma'uri vere ae 'life's story'
c. aika'u vere testimoni 'today's testimony'
d. nu-vere maiena-ma 'in front of us'
e. no-vere naora-vere fa'ari 'my mother's bilum'

The possessive morpheme *-vere* also occurs in other constructions which I do not fully understand. In the paraphrases in (83a,b), *vere* occurs with the one form of the agreement suffix, but not with the other, as shown by the ungrammatical forms in (83c,d).

(83) a. Erahe ara'a oki-vere kivi-a-'ani.
3p canoe one-POSS work-3sO-2/3pS
'They are making one canoe.'

b. Erahe ara'a oki kivi-amu-'ani.
3p canoe one work-3sO-2/3pS
'They are making one canoe.'

c. *Erahe ara'a oki kivi-a-'ani.
3p canoe one work-3sO-2/3pS

d. *Erahe ara'a oki-vere kivi-amu-'ani.
3p canoe one-POSS work-3sO-2/3pS

Noun phrases can be conjoined by *la* as in (84), or by juxtaposition as in (85). Use of the conjunction *la* is more common when only two noun phrases are conjoined.

(84) Robbin la Jeremiah la Kereva-ma ona-'ani.
Robbin and Jeremiah and Kerema-LOC go-2/3pS
'Robbin and Jeremiah went to Kerema.'

(85) Robbin, Jeremiah, Jon, erahe Kereva-ma ona-'ani.
Robbin Jeremiah John 3p Kerema-LOC go-2/3pS
'Robbin, Jeremiah, and John went to Kerema.'

Relative clauses occur before the head of the relative clause. There is no overt noun phrase in the relative clause which is coreferential with the head noun phrase; neither is there any anaphoric pronoun in the relative clause. The head noun phrase can be the subject of the main clause as in (86-87), or the object of the main clause, as in (88-89).

(86) No-vere aiparo au-ha aru ũa'i Kereva-ma ona-ha.
1s-POSS pig kill-3sS man someone Kerema-LOC go-3sS
'The man who killed my pig went to Kerema.'

(87) Ë'a faura hasi'avai-ha aiparo uma'i epa-ma li'o-ha.
that garden ruin-3sS pig very bush-LOC run.away-3sS

'The very pig that ruined that garden ran away to the bush.'

(88) Nao no-vere aiparo au-ha aru ũani ere-amu-'ena.
1s 1s-POSS pig kill-3sS man somebody see-3so-1sS

'I saw the man who killed my pig.'

(89) Nao no-vere faura hasi'avai-ha aiparo uma'i au-'ena.
1s 1s-POSS garden ruin-3sS pig very kill-1sS

'I killed the very pig that ruined my garden.'

In (86-89) the head noun phrase is coreferential with the implied subject of the relative clause. I have not been able to find any examples of relative clauses in which the head noun phrase is coreferential with an implied object. Attempts to elicit such examples have resulted in conjoined sentences, as in (90).

(90) Nao ë'a faura ere-amu-'ena, aiparo-ro hasi'avai-'amu-ha.
1s that garden see-3sO-1sS pig-ERG ruin-3sO-3sS

'I saw the garden that the pig spoiled.'

### *4.2 Adverb Phrases*

Adverb phrases include phrases indicating location, time, or manner.

#### *4.2.1 Locative Phrases*

The unmarked locative suffix is *-ma*. The meaning of *-ma* depends on the semantics of the noun and verb in the clause. With verbs of motion like *ava* 'to go up' and *wä'ï* 'to go down', *-ma* indicates the goal of motion, as illustrated in (91-92).

(91) Era uo-ma ava-ha.
3s mountain-LOC go.up-3sS

'He went up the mountain.'

(92) Nao Kereva-ma wä'ï-ena.
1s Kerema-LOC go.down-1sS

'I'm going down to Kerema.'

With verbs of position like *ve'i* 'to sit/stay' or *lea* 'to stand', *-ma* indicated the unmarked position for the particular noun. For a noun like *faha* 'platform/table' the unmarked position would be on the surface; therefore, *faha-ma* means 'on the table'. For a noun like *faura* 'garden' which refers to an area of land the unmarked position would be in or at the area; therefore, *faura-ma* means 'at/in the garden'. Similarly, with a verb of position *uo-ma* means 'at the mountain'.

With verbs of motion *mape* indicates the source of motion, as illustrated in (93-95).

(93) Era ëa mape ama'u-ha.
3s house from come.out-3sS

'He came out of the house.'

(94) Era uo mape wā'ī-ha.
3s mountain from go.down-3sS

'He came down the mountain.'

(95) Nao Kereva mape ava-'ena.
1s Kerema from go.up-1sS

'I am coming up from Kerema.'

Both source and goal can be indicated with verbs of motion, as illustrated in (96).

(96) Nao lo'u mape Kereva-ma wā'ī-ena.
1s village from Kerema-LOC go.down-1sS

'I am going down from the village to Kerema.'

The locative suffix *-ma* can be augmented with various positional particles to further specify location, as shown in (97).

(97)

| | |
|---|---|
| faha fe'u-ma | 'under the table' |
| ëa lue-ma | 'in the house' |
| ëa maima-ma | 'beside the house' |
| ëa maiena-ma | 'in front of the house' |
| ëa poe-ma | 'outside the house' |
| ëa ho'e-ma | 'near the house' |
| ëa apa-ma | 'behind the house' |
| ëa ho'e-ma | 'near the house' |
| ëa apa-ma | 'behind the house' |
| ëa au-ma | 'on the house' |
| ëa ü'üka moha fihi-ma | 'between the two houses' |

Many of these positional particles are body parts. For example, *maiena* is 'forehead', *poe* is 'side', *apa* is 'back', and *fihi* refers to the 'middle' fingers, that is, the ones next to the thumb. The other particles apparently have no synchronic meaning. While these particles are generally used with verbs of position, they can be used with verbs of motion, as illustrated in (98).

(98) Era ëa lue-ma ure-ha.
3s house in-LOC go-3sS

'He went into the house.'

### *4.2.2 Time Phrases*

Basic time phrases and the time words they are built from are listed in (99).

(99)

| | |
|---|---|
| aika'u | 'today' |
| lafi | 'yesterday' |
| pani'ira | 'tomorrow' |
| pani'ira ivirahama | 'day after tomorrow' |
| fuia | 'month' |
| apa fuia | 'next month' |
| manera fuia | 'last month' |
| ho'ora | 'night' |
| aika'u ho'ora | 'tonight' |
| lafi ho'ora | 'last night (yesterday night)' |
| manera ho'ora | 'night before last' |
| sioro | 'year' |

apa sioro 'next year'
manera sioro 'last year'

The word for 'month', *fuia*, also means 'moon'; the word for 'year', *sioro*, also means 'dry season' (November through January).

### *4.2.3 Manner*

There are a few manner phrases. The instrumental is marked by the general locative suffix *-ma*.

(100) akiva-ma 'with a knife'

Accompaniment is marked by *moha*.

(101) a. ahara moha 'with the (his) brother'
b. oharo moha 'with the tree'

This morpheme is also used in the expression for between in (97) above. The expression in (101b), *oharo moha*, occurred in one text in the clause 'Cuscuses sit in trees'. Its usage here may reflect a perception that the tree accompanies the cuscus (opossum) in general.

### *4.3 Intensifier Phrases*

There are two ways to intensify an adjective or an adverb. The first, the suffix *-ao* 'very', has been found in only one phrase.

(102) ĕa ho'ema'ao 'very near the house'

The second, ha'eka 'very', is used extensively.

(103) ekakau himiri ha'eka 'very many things'
aiparo hi'ivira ha'eka 'very big pig'

## 5. Words

### *5.1 Verbs*

All verbs take subject agreement suffixes (SAS) which agree with the subject in person and number. These affixes are listed in section 6.1. The third plural SAS can be used in place of the third singular SAS with third singular subjects, as shown in (104b); the third singular SAS cannot be used with third plural subjects, as illustrated in (104c).

(104) a. Aru oki lea-ha.
man one stand-3sS
'One man is standing.'

b. Aru oki lea-'ani.
man one stand-3pS
'One man is standing.'

c. *Aru ŭ'ŭka lea-ha.
man two stand-3sS

In addition to SAS's, transitive and ditransitive verbs take object agreement suffixes (OAS) which agree with the object in person and number. These affixes are listed in section 6.1. The OAS

occurs between the verb root and the SAS. The third singular OAS is optional, as illustrated in (105).

(105) a. Evera-ro no-vere aiparo au-amu-ha.
dog-ERG 1s-POSS pig kill-3sO-3s

'The dog killed my pig.'

b. Evera-ro no-vere aiparo au-ha.
dog-ERG 1s-POSS pig kill-1sS

'The dog killed my pig.'

The OAS agrees with the indirect object (goal), not the direct object (patient), for the ditransitive verb *ini* 'to give', as shown in (106).

(106) a. Era aiparo oki ofe ini-e-ha.
3s pig one 2p give-2pO-3sS

'He gave you (pl) one pig.'

b. Era aiparo himiri nao ne-ni-ha.
3s pig many 1s give-1sO-3sS

'He gave me many pigs.'

There are no tense distinctions in Kaki Ae. Instead, there is a general distinction between realis and irrealis. Realis is unmarked, while *-ra* marks irrealis. The use of the irrealis mood has been outlined above. In simple sentences it generally marks either future action or negation. When it marks a future action it occurs before the SAS, as illustrated in (107).

(107) Era pani'ira na-ra-ha.
3s tomorrow eat-IRR-3sS

'Tomorrow he will eat.'

When it occurs in a negative sentence, the SAS does not occur.

(108) Era evera ore am-amu-ra.
3s dog NEG hit-3sO-IRR

'He did not hit the dog.'

There is at least one occurrence of the irrealis that I cannot explain.

(109) Nao ara'a feha-ra ere-amu-'ena.
1s canoe spoil-IRR see-3sO-1sS

'I saw the rotten canoe.'

Most other morphemes which appear as verbal suffixes in the texts are conjunctions which occur word-finally. It is unclear whether these are part of the verb or separate words, as I have not found criteria on which to make consistent word breaks. One other morpheme which occurs word internally is *-m*, as shown in (110).

(110) Opa haima ika la'u-m-enu-pe, ĩ'ĩ-m-enu-ma...
first bush self clean-?-1pS-and burn-?-1pS-LOC

'First we clear the bush, when it is cleared...'

This morpheme appears to have a habitual connotation. It is used consistently in this one procedural text, but even the same story teller does not use it in another procedural text.

Reduplication is occasionally used to indicate continuous aspect, as shown in (111).

(111) ...nane oki veri-veri...
fish one pull-CONT

'...they keep pulling in fish...'

At least one verb, *a* 'to get', takes different forms with singular and plural objects.

(112) a 'get (sg)' o'a 'get (pl)'

Either form can be used with a plural object, but only *a* can be used with a singular object.

(113) a. Nao aiparo oki a-'ena.
1s pig one get-1sS

'I got one pig.'

b. *Nao aiparo oki o'a-e-'ena.
1s pig one get-3pO-1sS

c. Nao aiparo himiri a-'ena.
1s pig many get-1sS

'I got many pigs.'

d. Nao aiparo himiri o'a-e-'ena.
1s pig many get-3pO-1sS

'I got many pigs.'

At least one verb, *ini* 'to give', takes different forms with first person versus nonfirst person objects.

(114) ne 'give (me/us)' ini 'give (you/he/she/them)'

This verb also takes a slightly different set of OAS's than do other verbs; this is discussed further in section 6.1.

The morpheme *ehera* 'hungry' can be used as either a verb, as in (115a), or as a noun, as in (115b).

(115) a. Nao ehera-ne-ha.
1s hungry-1sO-3sS

'I am hungry.'

b. Nao nane ehera-ro o'a-ne-ha.
1s fish hungry-ERG get-1sO-3sS

'Fish hunger got me./I am hungry for fish.'

### *5.2 Nouns*

The only noun morphology is differentiation of singular and plural. The most general way to form plurals is by using the suffix *-voro*. This affix can be used on human nouns, as in (116a), animate nouns, as in (116b), inanimate nouns, as in (116c), and even mass nouns, as in (116d). In the case of mass nouns, *-voro* means 'much'.

(116) Singular Plural

| | | | |
|---|---|---|---|
| a. | ä'u | ä'uvoro | 'woman' |
| | aru | aruvoro | 'man' |
| | aruä'u | aruä'uvoro | 'person' |

| | | | |
|---|---|---|---|
| b. | aiparo | aiparovoro | 'pig' |
| | evera | everavoro | 'dog' |
| | mini | minivoro | 'bird' |
| | nane | nanevoro | 'fish' |
| c. | aie'i | aie'ivoro | 'fire' |
| | ara'a | ara'avoro | 'canoe' |
| d. | aime | aimevoro | 'water' |

A second way to form plurals is by using the affix *-fe*. This affix can be used with most kinship terms, as shown in (117).

| (117) | Singular | Plural | |
|---|---|---|---|
| | napara | naparafe | 'father' |
| | naora | naorafe | 'mother' |
| | onera | onerafe | 'sister' |
| | ahara | aharafe | 'brother' |
| | laira | lairafe | 'aunt' |
| | anaure | anaurefe | 'uncle' |
| | nomara | nomarafe | 'in-law' |

At least two kinship terms cannot take the affix *-fe*. Instead they have separate plural forms, as shown in (118). Both of these terms can be used as common nouns ('boy' and 'girl') or as kinship terms ('son' and 'daughter').

| (118) | Singular | Plural | |
|---|---|---|---|
| | mono | moroua | 'son, boy' |
| | muru | murua'u | 'daughter, girl' |

Finally, there is at least one noun that forms the plural by reduplication.

(119) aua 'child' aua'aua 'children'

Although most, if not all, nouns have plural forms, the singular form is generally used, as illustrated in (120).

(120) ...aua erahe ore naora era kapora koare mape ma-ha.
child 3p know mother 3s fishing trip from come-3sS

'...the children know the mother will come from the fishing trip.'

## 6. Morpheme Categories

### *6.1 Verbal Agreement Suffixes*

The use of subject agreement suffixes (SAS) and object agreement suffixes (OAS) is discussed in section 5.1. The set of SAS's is listed in (121).

| (121) | | |
|---|---|---|
| | -'ena | 'first singular' |
| | -he/ke | 'second singular' |
| | -ha/ka | 'third singular' |
| | -'enu | 'first plural' |
| | -'ani | 'second/third plural' |

Most verbs take *-he/-ha* with second and third singular subjects; a minority take *-ke/-ka*. No verbs take *-he/-ka* or *-ke/-ha*.

The OAS's are listed in (122).

| | | |
|---|---|---|
| (122) | -ne | 'first singular' |
| | -'e | 'second singular' |
| | -amu/a | 'third singular' |
| | -ne'üa | 'first plural' |
| | -e | 'second/third plural' |

I have not found any conditioning factors for the alternation in the third singular OAS.

One verb, *ini* 'to give', takes a slightly different set of OAS's, as listed in (123).

| | | |
|---|---|---|
| (123) | -ni | 'first singular' |
| | -'e | 'second singular' |
| | -Ø | 'third singular' |
| | -ni'üa | 'first plural' |
| | -e | 'second/third plural' |

The *e* in the regular set of first person OAS's corresponds to *i* in the OAS's for the verb *ini* 'to give'; the regular third singular OAS *-amu/a* corresponds to -Ø. As noted in section 5.1, the OAS's generally agree in person and number with the indirect object for the ditransitive verb *ini* 'to give'. When the direct object is plural, however, the first plural OAS is *-nu'üa* instead of *-ni'üa*, while the first singular OAS remains *-ni*, as shown in (124).

| | | |
|---|---|---|
| (124) | ne-ni-'ani | 'they gave them to me' |
| | ne-nu'üa-'ani | 'they gave them to us' |

### *6.2 Verb Roots*

Verb roots are classified by whether they can be used in intranstive, transitive, or ditransitive clauses. As noted in section 3.1.1, some verbs can be used in more than one type of clause. Verbs are also classified as to the form of the second and third singular SAS they take (see section 6.1).

### *6.3 Personal Pronouns*

There are six pronouns distinguished by person (first, second, and third) and number (singular and plural). There are no distinct dual forms, nor is there a distinction between inclusive and exclusive.

| | | | | |
|---|---|---|---|---|
| (125) | nao | '1s' | nu'u | '1p' |
| | ao | '2s' | ofe | '2p' |
| | era | '3s' | erahe | '3p' |

The possessive forms are derived from these basic forms by adding the possessive suffix *-vere*. The *ao* diphthong in the first and second singular forms is reduced to *o*, and the first plural form *nu'u* is shortened to *nu*.

| | | | | |
|---|---|---|---|---|
| (126) | novere | '1s' | nuvere | '1p' |
| | overe | '2s' | ofevere | '2p' |
| | eravere | '3s' | erahevere | '3p' |

The ergative forms are derived from the basic forms by adding the ergative suffix *-ro*. The *ao* diphthong in the first and second singular forms is reduced to *a*, the first plural form *nu'u* is shortened to *nu*, and the final *e* in the second and third plural forms becomes *o*.

| | | | | |
|---|---|---|---|---|
| (127) | naro | '1s' | nuro | '1p' |
| | aro | '2s' | oforo | '2p' |
| | eraro | '3s' | erahoro | '3p' |

### *6.4 Demonstrative Pronouns*

There are three demonstrative pronouns which refer to the distance of the object from the speaker. All three can be used adverbially (here/there/yonder) or adjectivally (this/that/yond).

| | | |
|---|---|---|
| (128) | ne'e | 'here/this' |
| | ehe/ɛ'a | 'there/that' |
| | ɛa'ehe'a/vehe'a | 'yonder/yond' |

### *6.5 Interrogative Pronouns*

The basic interrogative pronouns are listed in (129).

| | | |
|---|---|---|
| (129) | naero | 'who' |
| | ena'i/enena'i | 'what' |
| | enaha'u | 'when' |
| | ene(ipi)veha | 'why' |
| | ka'a-ma | 'where' |

### *6.6 Nouns*

Nouns are divided into classes on the basis of which affix they take to form plurals. For more discussion, see section 5.2.

### *6.7 Adjectives*

Adjectives can be divided into two classes: those which occur before the noun and those which occur after the noun. As outlined in section 4.1, the adjectives which occur before the noun are adjectives of nationality or place of origin, while those that occur after the noun are adjectives of quality. Adjectives of quality denote colour as in (130a), quantity as in (130b), size or dimensions as in (130c), or quality as in (130d).

| | | | |
|---|---|---|---|
| (130) | a. | epore | 'black' |
| | | e'ero | 'white' |
| | | nano | 'yellow' |
| | | o'u | 'green' |
| | | viro | 'red' |
| | b. | himiri | 'many' |
| | | hoi | 'few' |
| | | pirari | 'few' |
| | | kau'ara | 'some' |
| | c. | hi'ivira | 'big' |
| | | paka'u | 'small' |
| | | veivei | 'long' |
| | | au | 'short' |
| | d. | ani | 'old' |
| | | moea | 'old' |
| | | apai | 'young' |
| | | oera | 'new' |
| | | mehau | 'heavy' |
| | | kine | 'ripe' |
| | | kaora | 'unripe; not heavy' |

| | |
|---|---|
| namaia | 'good' |
| feha | 'bad (with sores)' |
| hove'a | 'correct' |
| no'a | 'straight' |
| lohoru | 'round' |
| fa'ifa'i | 'wet' |
| hara'o | 'dry' |
| hahe'a | 'warm' |
| hahu'u | 'cold' |
| eani | 'left (side)' |
| haune | 'right (side)' |

### *6.8 Numerals*

The counting system is based on 'two' and 'five', as shown in (131).

(131)

| | |
|---|---|
| oki | 'one' |
| ü'üka | 'two' |
| ü'üka oki | 'three' (also *ü'üka pau'a*) |
| ü'üka ü'üka | 'four' |
| upu oka'i | 'five' |
| (upu) oka'i oka'i | 'ten' |

The words for 'five' and 'ten' are based on *upu* 'arm, hand' and *oka'i* 'side'.

## Appendix A: A Kaki Ae – English Lexicon

The 450 entries in this dictionary come from the texts in Appendix C, the SIL standard word list (including the Swadesh 100 word list), and miscellaneous words elicited during text analysis and general conversations. The part of speech is in parentheses after the vernacular form; this designation should be treated with a healthy dose of skepticism, especially in the case of verbs of quality versus adjectives. Positional particles discussed in section 4.2.1 are designated as 'pp', or postpositions.

Verbs that take second and third singular agreement suffixes beginning in *k* are so marked along with the part of speech. All other verbs take suffixes beginning in *h*. Nasal vowels are treated the same as oral vowels for the purpose of alphabetisation, while ⟨'⟩, the glottal stop, comes last in the alphabet.

*a* (vt: *o'aeha* with pl. obj.) to get: *Nao evera o'ae'ena.* 'I got many dogs.'

*ä* yes-no question marker

*ae* (n) word; language

*aena* (n) betelnut

*äë'a* (pro) that

*ahara* (n) brother

*ahena* (n) liver

*ahi* (vt) to cut (alternant: *asi*)

*ai* (n) sago

*aie'i* (n) fire

*aika'u* (adv) now; today

*aime* (n) water

*aimumu* (n) calf of leg

*aino* (n) spittle

*aio* (n) clay pot (traditional)

*aiparo* (n) pig

*aki* (n) body

*akiva* (n) knife

*ama* (vt) to hit

*ama'u* (vi) to come out

*ame* (n) breast

*amere* (n) grass skirt

*-amu* (afx) third person singular object marker

*amuri* (n) louse

*ana* (vi) to laugh

*anara* (n) mouth

*ane* (n) rubbish

*ane'e* (adv) here (synonym: *ne'e*)

*ani* (adj) old, used for animal

*anipe* (conj) then

*anure* (n) husband

*ao* (pro) you (sg)

*aora* (vt: *k*) to make grass skirt (*amere*) or canoe (*ara'a*)

*äo'a* (n) a swamp

*apa* (n) back: *aki apa* 'entire back'; (pp) after: *apa fuia* 'next month'; *apa sioro* 'next year'

*apai* (adj) young, used for animal

*ape* (pp) for

*ara* (v) to burn

*ara'a* (n) canoe

*arepo* (n) a fly

*are'e* (n) shellfish

*ari* (vt) to throw something

*aro* (pro) you (sg:subject)

*aro* (n) head

*aru* (n) man

*arua'u* (n) person

*aru'u* (n) people

*ase* (n) sugarcane

*asena* (vt) to eat

*asi* (vt) to cut small things

*asia* (vt) to cut

*au* (vt) to shoot, to kill

*au* (adj) short

*au* (pp) on

*-au* (afx) plenty

*aua* (n) child

*auare* (n) spider

*Au'arari* (n) God

*au'i* (vt) to say

*ava* (vi) to go up

*ava'ivori* (n) old man

*a'e* (vi: *k*) to walk

*-ä'e* (afx) yes-no question marker

*a'o* (n) traditional ladle made of coconut shell and stick

*ä'ö* (n) a large string bag

*ä'u* (n) woman

*a'uvori* (n) old woman

*-e* (afx) imperative marker

*-e* (afx) third plural object agreement

*ëa* (n) house

*eama* (n) a black bird about the size of a chicken

*eani* (adj) left (direction)

*ëa'a* (interjec) that's all

*ëa'ï'ao* (pro) same

*ehe* (adj) that: *ehera* 'that one'

*ëhë* (interjec) yes

*ehera* (v) hungry: *nao eheraneha* 'I am hungry'; *nu'u eherane'üaha* 'we are hungry'; *erahe eheraeha* 'they are hungry'; *erahe eheraeraha* 'they will be hungry'

*ehune* (n) nape of neck

*eisi* (n) banana

*eka* (vi: *k*) to be sick

*ekakau* (pro) something

*ekalesia* (n: from Greek) church, or member of church

*ekau* (pro) something

*eke* (n) the fourth and fifth fingers (counting from the thumb)

*ema'i* (v) to prepare

*emera* (vt) to tell

*enaea* (vt) to buy

*enaha'u* (pro) when?

*enape* (n) crocodile

*ena'i* (pro) what?

*ene* (pro) why

*enena'i* (pro) what?

*epa* (n) bush

*epore* (n) charcoal; (adj) black

*era* (pro) he, she, it

*erahe* (pro) they

*eraro* (pro) he, she, it (subject)

*ere* (n) stone

*erea* (vt) to see

*ero* (vi) to turn, also used when the water turns and is coming in, becoming high tide

*esi* (vt) to wear

*evera* (n) dog

*evera* (vt) to tell someone

*ë'a* (pro) that

*e'e* (vt) to chop

*ë'ë* (vt) to dig something up

*ë 'ë* (n) coconut

*e 'ero* (adj) white

*fae* (n) sand

*fafaro 'a* (n) the place where canoes are kept

*faha* (n) platform, used for table

*faia* (n) arrow with flat, broad tip for pigs

*fai 'afai 'a* (adj) wet

*fari* (n) story

*faura* (n) garden: *nao faura ena* 'I am doing the garden'; *ao faurahe* 'you are doing the garden'

*fave* (vi) to bark

*fa 'apai* (vt) to open

*fa 'ari* (n) small string bag used for carrying betelnut and related items; basket

*-fe* (afx) plural

*feha* (v) to spoil

*fehara* (adj) bad; with sores

*fehea* (vt) to husk coconuts, sugarcane, betelnut

*fera* (n) leg or foot

*ferea* (vi) to jump

*ferea* (vt) to pull out from something

*fe 'u* (pp) under

*fihi* (n) the first and second fingers (counting from the thumb); middle

*finu* (n) an island

*foa* (n) vine type, short

*fua* (vt) to carry

*fuani* (n) seed

*fuia* (n) moon; month

*fu 'iha* (adj) full (used for liquid or dry items)

*-ha* (afx) third singular subject agreement

*haeke* (v) to make strong

*hafafia* (n) a bush fowl, nests on ground

*hafu* (vt) to meet someone

*hahe* (vt) to take useless skin off

*hahe 'a* (adj) hot; warm

*hahu 'u* (adj) cold

*haima* (n) bush

*haisa* (n) arrow with 3 to 4 tips for birds

*hara 'o* (adj) dry

*hasi 'avai* (vt) to ruin

*haua* (n) rat

*haua* (vi) be afraid

*hauka* (adj) straight

*haune* (adj) right (direction)

*hauraia* (n) thigh of leg

*hau 'ani* (n) sweet potato

*hava* (vt) to cut open

*havaro* (n) wallaby

*hava 'u* (n) show

*haveha* (conj) and then

*ha 'eka* (adv) very

*ha 'uehumo* (vi) to cough

*ha 'uhave 'i* (vi) to sit

*-he* (afx) second singular subject agreement

*heafo* (n) a struggle; (vi) to struggle

*hehe* (vt) to clear rubbish from the garden

*heka* (adv) far

*here* (n) belly

*hereane* (n) intestine

*himiri* (adj) many: *himiri ha 'eika* 'all; many (over 1000)'

*hina* (vi) to arrive

*hinehine* (adj) previous: *hinehine fuia* 'month in the past'; *hinehine ho 'ora* 'night in the past'; *hinehine sioro* 'year in the past'

*hi 'ivira* (adj) big

*hohiri* (n) heart

*hoi* (adj) few

*homa* (vt) to stab something using knife or spear

*homa 'i* (vt) to push foot into mud to push ka'i out of holes

*hove 'a* (adj) correct; to be fit; period of time

*ho 'ora* (n) night: *ho 'ora 'ini* 'midnight'

*ho 'u* (vi) to break

*huru* (vi) to fall down

*hu 'a* (n) a block of wood

*hu 'u* (n) tooth

*ie* (n) green parrot

*ifia* (n) mosquito

*ika* (pro) self

*ini* (n) eye

*ini* (vt: *ne* first person object) to give

*inimu* (n) fingernail or toenail; claw

*ipi* (n) reason

*irahoro* (pro) they (subject)

*isani* (conj) and

*isa'a* (n) traditional spoon made of coconut shell and stick

*isi* (vi) to fall from top of something

*ivare* (n) blood

*ivi'ira* (n) morning

*i'i* (n) a small piece of food

*ï'ï* (vt) to burn, as grass; to cook in the fire

*-ka* (afx) third singular subject agreement

*kai* (pp) to

*kaia* (vi) to paddle

*kaipe'a* (n) arrow with single round tip

*kane'ea* (pro) here

*kaomo* (vi) the beginning of high tide

*kaora* (adj) unripe; light, not heavy

*kapai* (n) orchid

*kape* (conj) and

*kapora* (vi) to fish

*karo* (vt) to find

*kau* (n) house

*kava* (conj) so

*kavo* (n) bat, flying fox

*ka'ama* (pro) where?

*ka'i* (n) small green prawn-like creature which lives in the mangrove swamp and is used for bait

*-ke* (afx) second singular subject agreement

*kekese* (v) ready

*keko* (n) a type of bamboo used for building houses and fences

*kenekunu* (n) frog, green or brown in colour

*kere'a* (n) path; road

*keta* (n) mat woven from pandanas; pandanus

*ke'oro* (n) the activity of fishing, fishing expedition

*kine* (adj) ripe

*kivi* (n) work: *nao kivi a'ena* 'I am working.'; *ao kivi ahe* 'you are working'; *nu'u kivi a'enu* 'we are working'

*koarai* (vt) to help

*koare* (n) a trip

*koi'ara* (pro) another

*kore'ea* (int) no

*koru* (n) a small piece of food

*kou'ara* (adj) some

*kure'ai* (n) influence

*kuri'a* (adv) already

*kurokuro* (n) cuscus

*la* (conj) and

*lafi* (n) yesterday

*lafifi* (n) evening

*laha* (n) a fish species, red in colour

*laifuru* (n) afternoon

*laka* (v) to bear fruit

*lamo* (adj) only

*lamu* (vt) to plant stick in ground to tie canoe to

*lao* (n) axe; when used with *üa'i/uma'i* it refers to someone of European extract

*lare* (n) day; sun

*laro* (n) shoulder

*larua* (n) cassowary

*lasi* (n) yam

*lavara* (n) the southwest wind, resulting in rough seas

*la'a* (vi) to think

*la'i* (vt) to plant

*la'i* (adj) together

*la'i* (vt) to shoot

*-la'i* (afx) future

*la'u* (vt) clean

*lea* (vi) to be standing

*leou* (vi) to swim (as a fish)

*leu* (vi) to go around in no particular direction

*li* (vi) to sleep

*liave'i* (vi) to die

*lire* (n) sucker

*li'i* (n) remaining

*li'o* (vi) to run away

*loea* (vi) return, travel back

*lofo* (vi) be strong

*lohoru* (adj) round

*loku* (n) pawpaw

*loro* (n) grass

*loroka* (vi) be completed

*lo'era* (conj) and; so

*lo'u* (n) village

*lue* (pp) in

*luera* (conj) then, that moment

*-ma* (pp) locative

*ma* (vi) to come

*maia* (n) catfish

*maiana* (n) tongue

*maiena* (n) forehead; (pp) in front

*maima* (pp) near

*maina* (n) lime

*manera* (adj) previous: *manera ho'ora* 'night before yesterday'; *manera fuia* 'last month'; *manera sioro* 'last year'

*mao* (vi) to dance

*mape* (pp) from

*mari* (vt) to catch; to hold

*mavi* (n) bandicoot

*ma'ao* (adj) early, used for morning; just then

*ma'i* (vi) to go down

*ma'o* (n) oldest brother, first born brother

*ma'omuru* (n) older sister

*ma'uri* (n) life

*mehau* (adj) heavy

*meima* (n) hornbill

*meivi* (n) mango

*memere* (n) snake

*mene* (n) sky: *mene uru* 'cloud'

*mene* (n) root

*mero* (n) grease, fat

*merove* (n) vine used for tying thatch on roof

*mihamiha* (n) a scorpion

*mini* (n) bird

*moea* (adj) old

*moha* (pp) with

*mono* (n) boy; son

*mo'e* (vi) to listen

*mo'orea* (vt) to tie, as grass for a skirt

*mua* (vt: *k*) to drink

*mue* (vi) to return

*muhu* (vt) to rub, squeezing, as when preparing grass for skirt

*muka* (n) ant: *muka hoi* 'rice (it looks like ant eggs)'

*mumu* (n) egg

*muru* (n) girl; daughter

*na* (vt) to eat

*naero* (pro) who?

*namaia* (adj) good

*nanamu* (vt) to bite, as a dog bites

*nane* (n) fish

*nano* (adj) yellow

*nao* (pro) I

*naora* (n) mother

*napara* (n) father

*narakau* (n) food

*naro* (pro) I (subject)

*naume* (adv) again

*-ne* (afx) first singular object marker

*ne'e* (adj) this: *ne'era* 'this one'

*-ne'ũa* (afx) first plural object agreement

*noa* (n) taro sp with one tuber with smaller heart-shaped leaves

*noani* (n) high tide

*noe* (n) nose

*nomara* (n) an in-law

*nora* (n) thumb

*nori* (n) snot

*no'a* (adj) straight

*no'i* (vt) to ask

*nuro* (pro) we (subject)

*nu'u* (pro) we

*o* (conj) or

*oe* (n) ear

*oera* (adj) new

*ofe* (pro) you (pl)

*oforo* (pro) you (pl:subject)

*oharo* (n) tree

*ohe'ohe* (n) armpit

*oka'i* (n) side: *upu oka'i* 'five'; *oka'i oka'i* 'ten'

*oki* (adj) one: *ũ'ũka oki* 'three'

*oko* (n) joint: *fera oko* 'knee; ankle'; *upu oko* 'elbow; wrist'

*ome* (interjec) word used when you can't think of the right one

*ome* (vt) to make something

*ona* (vi) to go

*one* (adv) negative

*onera* (n) younger sister

*onomo* (n) auxiliary hair, also used for pig, etc.; feather

*opa* (adv) first

*oporo* (n) dead wood; firewood

*ora'e* (vt) to show

*ore* (n) leaf

*ore* (vt) to know

*ore* (adv) not

*ore* (vi: *k*) to be finished

*ore'ea* (pro) nothing

*orohavu* (n) mist

*orora* (n) tail

*orora* (n) younger brother

*oura* (vt) remove

*ovava* (vi) to be bright

*ovora* (vi) when the water is going back, becoming low tide

*o'ae* (vt) to take many, not used for singular objects

*o'e* (vt: *k*) to make

*ŏ'ĕ* (vt) to try to do (alternant: *ome*)

*o'i* (vt) to put

*o'ĭ* (vt) to say

*o'o* (vi: *k*) gather

*o'ore* (vt) to hunt

*o'u* (adj) green

*paira* (pro) another

*paka'u* (adj) small; (n) baby

*pani* (n) neck

*pani'ira* (n) tomorrow

*pao'a* (adj) one (used with *ü'üka* 'two' to make three)

*paua* (vi: *k*) to cry

*pauamo'e* (vt) to hear

*pa'i* (adj) same

*pe* (conj) and

*pirari* (adj) few

*piri* (n: from English) bean

*pirikari* (n) taro sp with plenty of tubers and large heart-shaped leaves

*poe* (n) side

*poko'u* (n) throat (generally used with *pani*)

*poko'u* (n) a type of bamboo used for cooking

*ponu* (n) grasshopper

*porapora* (adj) early, used of morning

*po'e* (n) heron

*pupura* (n) hair of beard or armpit

*pura* (n) clothing

*-ra* (afx) irrealis: information question marker, future tense marker, negative agreement

*-ro* (afx) ergative marker

*sa'i'ore'ea* (adv) not long

*se'o* (n) a tree sp with edible fruit

*si* (vi) to get into traveling object

*sia* (n) okari tree

*sia* (vt) to send

*siahu* (n) power

*sioro* (n) year; dry season

*soa'oki'ao* (adv) together

*soka* (vi: *k*) stop

*soka* (conj) so

*sukerere* (n) belief

*supi'a* (n) spear

*tiro* (n) a container for holding water, traditionally bamboo, coconut shell, or clay pot

*u* (n) chin

*u* (vt) to call

*üa* (vt) to put into

*üani* (pro) somebody, used with *aru* 'man' (alternant: *üa'i; uma'i*)

*ua'i* (vi) to go down

*üa'i* (pro) someone (alternant: *uma'i; üani*)

*uki* (n) bone

*ukuri* (vt) to hear

*uma* (n) smoke; cigarette; tobacco

*uma'i* (adv) very

*umu* (n) ashes

*une* (n) breadfruit

*uo* (n) mountain

*upa* (n) rain

*uparare* (n) wet season

*upu* (n) arm and hand: *upu apa* 'back of the palm'; *upu faha* 'palm of the hand'

*urara* (n) meat

*ure* (vi) to go into

*uri* (n) stick

*uri* (vt) to weave

*uri* (vt) to cook by boiling

*uriri* (vi) to run

*uru* (n) cloud (used with *mene*)

*uru* (n) name

*u'e* (vi: *k*) to stand up from other position

*ü'üka* (adj) two: *ü'üka oki* 'three'; *ü'üka pau'a* 'three'; *ü'üka ü'üka* 'four'

*u'uma* (n) bone of calf of leg

*u'umo* (n) hair (from head)

*u'uri* (n) centipede

*vaho* (n) wing

*vai* (n) river

*vaika* (v) don't

*vao* (n) a small net with cane circular frame for catching prawns

*vaura* (n) the northeast wind, resulting in somewhat rough seas

*va'a* (conj) so

*va'a* (vi) dead

*va'uva'u* (n) butterfly

*veahiri* (adv) usually

*vearovaeka* (n) the earth

*vea'e* (n) cockatoo

*veha* (adv) when

*vehe* (pro) there

*veivei* (adj) long

*vera'a* (n) skin; bark of tree

*vera'ama* (n) body

*-vere* (afx) possession marker

*vere* (vt) to want

*veri* (vt) to pull something

*veru* (n) gift

*ve'i* (vi) to sit

*ve'o* (n) wind

*via* (n) mustard, used with betelnut

*vihu'u* (n) star

*vire* (n) the mind

*viro* (adj) red

*voi* (n) spear

*vorivori* (adj) big, referring to many items

*-voro* (afx) plural

*vu'o* (vi) to fly (as a bird)

*warehava* (adv) first

*wä'ï* (vi) to go down

*-'ani* (afx) second or third plural subject agreement

*-'ao* (afx) only, used with adjectives

*-'au* (afx) plural marker

*-'e* (afx) second singular object marker

*-'ena* (afx) first singular subject agreement

*-'enu* (afx) first plural subject agreement

*-'i'i* (afx) very

**Appendix B: An English – Kaki Ae Finder List**

This finder list is to be used in conjunction with the dictionary in Appendix A. More information on the individual lexical items can be found in the dictionary. The English words used for the finder list are generally the glosses used in the texts in Appendix C.

afraid: *haua*

after: *apa*

afternoon: *laifuru*

again: *naume*

already: *kuri'a*

and: *isani; kape, pe; la; lo'era*

another: *koi'ara; paira*

ant: *muka*

arm: *upu*

armpit: *ohe'ohe*

arrive: *hina*

arrow: *faia; haisa; kaipe'a*

ashes: *umu*

ask: *no'i*

at: *ma*

axe: *lao*

baby: *paka'u*

back: *apa*

bad: *fehara*

bamboo type: *keko; poko'u*

banana: *eisi*

bandicoot: *mavi*

bark: *bera'a*

bark, to: *fave*

basket: *fa'ari*

bat: *kavo*

bean: *piri*

bear fruit: *laka*

belief: *sukerere*

belly: *here*

betelnut: *aena*

big: *hi'ivira; vorivori*

bird: *mini*
bird species: *eama; hafafia*
bite: *nanamu*
black: *epore*
block: *hu'a*
blood: *ivare*
body: *aki; vera'ama*
bone: *uki*
bone of calf: *u'uma*
boy: *mono*
breadfruit: *une*
break: *ho'u*
breast: *ame*
bright: *ovava*
brother: *ahara; ma'o; orora*
burn: *ara; ï'ï*
bush: *epa; haima*
butterfly: *va'uva'u*
buy: *enaea*
calf: *aimumu*
calf bone: *u'uma*
call: *u*
canoe: *ara'a*
canoe place: *fafaro'a*
carry: *fua*
cassowary: *larua*
catch: *mari*
catfish: *maia*
centipede: *u'uri*
charcoal: *epore*
child: *aua*
chin: *u*
chop: *e'e*
church: *ekalesia*
claw: *inimu*
clean: *la'u*
clear: *hehe*
clothing: *pura*
cloud: *mene uru*
cockatoo: *bea'e*
coconut: *ë'ë*
cold: *hahu'u*
come: *ma*
come out: *ama'u*
complete: *loroka*
container: *tiro*
cook: *uri*
correct: *hove'a*
cough: *ha'uehumo*
crocodile: *enape*
cry: *paua*
cuscus: *kurokuro*
cut: *ahi; asi; asia; hava*
dance: *mao*
daughter: *muru*
day: *lare*
dead: *va'a*
die: *liave'i*
dig: *ë'ë*
dog: *evera*
don't: *vai*
drink: *mua*
dry: *hara'o*
dry season: *sioro*
ear: *oe*
early: *ma'ao; porapora*
earth: *vearovaeka*
eat: *asena; na*
egg: *mumu*
European: *lao*
evening: *lafifi*
eye: *ini*
fall: *huru; isi*
far: *heka*
father: *napara*
feather: *onomo*
few: *hoi; pirari*
find: *karo*
finger: *eke; fihi*
finish: *ore*
fire: *aie'i*
first: *opa; warehava*
fish: *nane*
fish species: *kapora; laha*
fishing: *kë'oro*
fit, be: *hove'a*
fly: *arepo*
fly, to: *vu'o*
food: *narakau*
for: *ape*
forehead: *maiena*
frog: *kenekunu*
from: *mape*
front: *maiena*
fruit, to bear: *laka*
full: *fu'iha*
garden: *faura*
gather: *o'o*
get: *a*
get in: *si*
gift: *veru*

girl: *muru*
give: *ini*
go: *ona*
go around: *leu*
go down: *ma'i; ua'i; wä'i*
go in: *ure*
go up: *ava*
God: *Au'arari*
good: *namaia*
grass: *loro*
grasshopper: *ponu*
grease: *mero*
green: *o'u*
hair: *onomo; pupura; u'umo*
hand: *upu*
head: *aro*
hear: *pauamo'e; ukuri*
heart: *hohiri*
heavy: *mehau*
help: *koarai*
here: *ane'e; kane'ea*
heron: *po'e*
high tide: *kaomo; noani*
hit: *ama*
hold: *mari*
hornbill: *meima*
hot: *hahe'a*
house: *ëa; kau*
hungry: *ehera*
hunt: *o'ore*
husband: *anure*
husk: *fehea*
in: *lue; ma*
in-law: *nomara*
influence: *kure'ai*
intestine: *hereane*
island: *finu*
joint: *oko*
jump: *ferea*
just then: *ma'ao*
kill: *au*
knife: *akiva*
know: *ore*
ladle: *a'o*
language: *ae*
laugh: *ana*
leaf: *ore*
left: *eani*
leg: *fera*
life: *ma'uri*
light: *kaora*
lime: *maina*
listen: *mo'e*
liver: *ahena*
long: *veivei*
long, not: *sa'i'ore'ea*
louse: *amuri*
low tide: *ovora*
make: *aora; ome; o'e*
man: *aru*
mango: *meivi*
many: *himiri*
mat: *keta*
meat: *urara*
meet: *hafu*
middle: *fihi*
mind: *vire*
mist: *orohavu*
moon: *fuia*
morning: *ivi'ira*
mosquito: *ifia*
mother: *naora*
mountain: *uo*
mouth: *anara*
mustard: *via*
nail: *inimu*
name: *uru*
nape of neck: *ehune*
near: *maima*
neck: *pani; ehune*
net: *vao*
new: *oera*
night: *ho'ora*
no: *kore'ea*
northeast wind: *vaura*
nose: *noe*
not: *one; ore*
not long: *sa'i'ore'ea*
nothing: *ore'ea*
now: *aika'u*
of: *vere*
okari: *sia*
old: *ani; moea*
old man: *ava'ivori*
old woman: *a'uvori*
on: *au*
one: *oki; pao'a*
only: *lamo; 'ao*
open: *fa'apai*
or: *o*
orchid: *kapai*

paddle: *kaia*
pandanas: *keta*
parrot: *ie*
path: *kere'a*
pawpaw: *loku*
people: *aru'u*
person: *arua'u*
piece: *koru*
pig: *aiparo*
plant: *lamu*
plant: *la'i*
platform: *faha*
pot: *aio*
power: *siahu*
prawn type: *ka'i*
prepare: *ema'i*
previous: *hinehine; manera*
pull: *ferea; veri*
push out: *homa'i*
put: *o'i; üa*
question: *ä; -ä'e*
rain: *upa*
rat: *haua*
ready: *kekese*
reason: *ipi*
red: *viro*
remaining: *li'i*
remove: *oura*
return: *loea; mue*
right: *haune*
ripe: *kine*
river: *vai*
root: *mene*
round: *lohoru*
rub: *muhu*
rubbish: *ane*
ruin: *hasi'avai*
run: *uriri*
run away: *li'o*
sago: *ai*
same: *ëa'ï'ao; pa'i*
sand: *fae*
say: *au'i; o'ï*
scorpion: *mihamiha*
season, dry: *sioro*
season, wet: *uparare*
see: *erea*
seed: *fuani*
self: *ika*
send: *sia*
shellfish: *are'e*
shoot: *au; la'i*
short: *au*
shoulder: *laro*
show: *hava'u; ora'e*
sick: *eka*
side: *oka'i; poe*
sister: *ma'omuru; onera*
sit: *ha'uhave'i; ve'i*
skin: *bera'a*
skin, take off: *hahe*
skirt: *amere*
sky: *mene*
sleep: *li*
small: *fihi; i'i; paka'u*
smoke: *uma*
snake: *memere*
snot: *nori*
so: *kava; soka; va'a*
some: *kou'ara*
someone: *üani; ae; üa'i*
something: *ekakau; ekau; ome*
son: *mono*
southwest wind: *lavara*
spear: *boi; supi'a*
spider: *auare*
spittle: *aino*
spoil: *feha*
spoon: *isa'a*
stab: *homa*
stand: *lea*
stand up: *u'e*
star: *bihu'u*
stick: *uri*
stone: *ere*
stop: *soka*
story: *fari*
straight: *hauka; no'a*
strengthen: *haeke*
string bag: *ä'ö; fa'ari*
strong: *lofo*
struggle: *heafo*
sucker: *lire*
sugarcane: *ase*
sun: *lare*
swamp: *äo'a*
sweet potato: *hau'ani*
swim: *leou*
tail: *orora*
take: *a'a; o'ae*
take off skin: *hahe*

taro species: *noa; pirikari*
tell: *emera; evera*
that: *äë'a; ehe; ë'a*
that's all: *ëa'a*
then: *anipe; haveha; luera*
there: *vehe*
thigh: *hauraia*
think: *la'a*
this: *ne'e*
throat: *poko'u*
throw: *ari*
thumb: *nora*
tie: *mo'orea*
to: *kai; ma*
together: *la'i; soa'oki'ao*
tomorrow: *pani'ira*
tongue: *maiana*
tooth: *hu'u*
tree: *oharo*
tree species: *se'o*
trip: *koare*
try: *ö'ë*
turn: *ero*
two: *ü'üka*
under: *fe'u*
unripe: *kaora*
usually: *veahiri*
very: *ha'eka; uma'i; 'i'i*
village: *lo'u*
vine: *foa; merove*
walk: *a'e*
wallaby: *havaro*
want: *vere*
water: *aime*
wear: *esi*
weave: *uri*
wet: *fai'afai'a*
wet season: *uparare*
what: *ena'i; enena'i*
when: *enaha'u; veha*
where: *ka'ama*
white: *e'ero*
who: *naero*
why: *ene*
wind: *be'o*
wind, northeast: *vaura*
wind, southwest: *lavara*
wing: *vaho*
with: *moha*
woman: *ä'u*
wood: *oporo*
word: *ae*
work: *kivi*
yam: *lasi*
year: *sioro*
yellow: *nano*
yes: *ëhë*
yesterday: *lafi*
young: *apai*

**Appendix C: Texts**

Seven relatively short texts are included in this section, all told by people from Uriri village. The first three are customary procedural in character, that is, they describe a customary activity. The first, Fishing (110 seconds in length), was told by Mini Wara, a middle-aged man. The next two, Gardening (40 seconds) and Weaving (55 seconds), were told by Urufa'u Avuvua, a middle-aged woman. The next text, Kikori Hunt (140 seconds), is a first person hunting narrative told by Mini Wara. The next three texts are broadly descriptive. Cuscus (25 seconds) is a description of the life of the cuscus told by Urufa'u Avuva. Church (20 seconds) is a statement by Simona, an old man, about his work for the church. My Life (55 seconds) is a complaint by Kakare Kuku, an old man, about the lack of help from his children. The final text, Prayer (75 seconds), is a prayer from a Sunday morning church service by James Aru, an educated middle-aged man.

Minimal editing was done in each text. Punctuation generally follows the intonation of the speaker, with full stops signalling pauses with falling intonation and commas signalling pauses with rising intonation. The presentation of the texts involves a three-line interlinearisation. The first line represents the actual pronunciation in the practical orthography. The second line gives the morphemic representation. Morphemes are given in isolation form ignoring morphophonemic effects. For example, *novere* 'my' is represented as *nao-vere* since *nao* is the isolation form for 'I'. The third line gives a morpheme-by-morpheme gloss in English.

*Fishing*

Fishing 1

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Nuvere | ne'e | lo'uvere | fari | nao | ä'uvoro, | veahiri | kaporaraveha | ma'i'ani | fari, |
| nu'u-vere | ne'e | lo'u-vere | fari | nao | ä'u-voro | veahiri | kapora-ra-veha | ma'i-'ani | fari |
| 1p-POSS | this | village-POSS | story | 1s | woman-PL | usually | fish-IRR-when | go.down-2/3pS | story |

| | | |
|---|---|---|
| nao | ne'e | au'inao. |
| nao | ne'e | au'i-nao |
| 1s | this | say-1s |

'Our village story, I will tell the story of how the women go down to fish.'

Fishing 2

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Nuvere | ä'u | erahe | liaisani | ivi'ira | porapora | ma'ao, | erahe | aua | everae'isani. |
| nu'u-vere | ä'u | erahe | li-a-isani | ivi'ira | porapora | ma'ao | erahe | aua | evera-e-isani |
| 1p-POSS | woman | 3p | sleep-get-and | morning | early | early - | 3p | child | tell-2/3pO-and |

'Our women they sleep and in the early morning they tell the children.'

Fishing 3

| | | | | |
|---|---|---|---|---|
| Nao | aika'u | kaporaveha | wä'ïnao | au'isani. |
| Nao | aika'u | kapora-veha | wä'ï-nao | au'i-isani |
| 1s | now | fish-when | go.down-1s | say-and |

'I'll tell about how they go down to fish.'

Fishing 4

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Wä'ï | ka'i | homa'isani, | ara'akaia | aisani, | vao | aisani, | aime | katlain, | erahe | |
| Wä'ï | ka'i | homa'i-isani | ara'a-kaia | a-isani | vao | a-isani | aime | katlain | erahe | |
| go.down | prawn.type | push.out-and | canoe-paddle | get-and | net | get-and | water | fishing.line | 3p | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| tiro, | narakau | oki | va'a | mari'isani, | ä'ö | luema, | aisanipe | wä'ï | ara'ama |
| tiro | narakau | oki | va'a | mari-isani | ä'ö | lue-ma | a-isani-pe | wä'ï | ara'a-ma |
| container | food | one | so | hold-and | string.bag | in-LOC | get-and-? | go.down | canoe-LOC |

| |
|---|
| sihaisani. |
| si-ha-isani |
| get.in-3sS-and |

'They go down and get the bait, get the paddle, get the bait net, fishing line, they get the water container, they hold some food, get the bilum and go down and get into the canoe.'

Fishing 5

| | | |
|---|---|---|
| Sihaisanipe | va'a | ama'u'isani. |
| si-ha-isani-pe | va'a | ama'u-isani |
| get.in-3sS-and-? | so | come.out-and |

'They get in and go out.'

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Fishing 6

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Ama'u | ke'oro | ari'isani, | luerama | nane | oki | veriverí | lorokarahama | | mene |
| Ama'u | ke'oro | ari-isani | luera-ma | nane | oki | veri-RDP | loroka-ra-ha-ma | | mene |
| come.out | fishing | throw-and | then-LOC | fish | one | pull-CONT | complete-IRR-3sS-LOC | | sky |

| | | | | | | |
|---|---|---|---|---|---|---|
| ereamu'isanima | laifururahama, | eraheva'a | vere'isani | narakau | koru | va'a |
| erea-amu-isani-ma | laifuru-ra-ha-ma | erahe-va'a | vere-isani | narakau | koru | va'a |
| see-3sO-and-LOC | afternoon-IRR-3sS-LOC | 3p-so | want-and | food | piece | so |

ï'ï'isani.
ï'ï-isani
burn-and

'They go out and throw the fishing lines, the moment they finish pulling in the fish, when they see the sky and it is afternoon, they will cook the pieces of food they want.'

Fishing 7

| | | |
|---|---|---|
| ï'ï'isanipe | naisanima | lorokarahaveha. |
| ï'ï-isani-pe | na-isani-ma | loroka-ra-ha-veha |
| burn-and-? | eat-and-LOC | complete-IRR-3sS-when |

'They finish cooking and eating.'

Fishing 8

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Aime | era | erorakape | noani | kaomoraha, | eraheva'a | kaiaka | loea'isani |
| Aime | era | ero-ra-kape | noani | kaomo-ra-ha | erahe-va'a | kaia-ka | loea-isani |
| water | 3s | turn-IRR-and | high.tide | high.tide-IRR-3sS | 3p-so | paddle-3sS | return-and |

laifuru'ao.
laifuru-'ao
afternoon-only

'When the water is coming back in and going to high tide, they paddle and return back in the afternoon.'

Fishing 9

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Kaiaka | loea'isani | aua | erahe | ore | naora | era | kapora | koare | mape | maha. |
| kaia-ka | loea-isani | aua | erahe | ore | naora | era | kapora | koare | mape | ma-ha |
| paddle-3sS | return-and | child | 3p | know | mother | 3s | fish | trip | from | come-3sS |

'They paddle and return and the children know the mothers will come from the fishing trip.'

Fishing 10

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Ë'aveha | erahe | ekau | himiri | kekese | oporo | e'eisani, | narakau, | ekau | himiri |
| ë'a-veha | erahe | ekau | himiri | kekese | oporo | e'e-isani | narakau | ekau | himiri |
| that-when | 3p | something | many | ready | wood | chop-and | food | something | many |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| kivika | o'i'isanipe | erahevere | ini | fafaro'ama | ao | erea'isani | naora | era |
| kivi-ka | o'i-isani-pe | erahe-vere | ini | fafaro'a-ma | ao | erea-isani | naora | era |
| work-3sS | put-and-? | 3p-POSS | eye | canoe.place-LOC | 2s | see-and | mother | 3s |

loearaha.
loea-ra-ha
return-IRR-3sS

'That is why many things are ready, they chop wood and prepare and put out much food, their eyes look only to the canoe place, for their mother's return.'

Fishing 11

| Naoraro | loearakape | naoraro | uraha | luerama, | aua | erahe | uriri'uriri'isani |
|---|---|---|---|---|---|---|---|
| naora-ro | loea-ra-kape | naora-ro | u-ra-ha | luera-ma | aua | erahe | uriri-RDP-isani |
| mother-ERG | return-IRR-and | mother-ERG | call-IRR-3sS | then-LOC | child | 3p | run-CONT-and |

| naora | kai, | wă'ɪ'isanipe | koi'ara | oporo | hu'a | fua'isani, | koi'ara | ë'a | eravere |
|---|---|---|---|---|---|---|---|---|---|
| naora | kai | wă'ɪ-isani-pe | koi'ara | oporo | hu'a | fua-isani | koi'ara | ë'a | era-vere |
| mother | to | go.down-and-? | another | wood | block | carry-and | another | that | 3s-POSS |

| katlain | ekakau | himiri | fua'isani, | aisanipe | ava'isani. |
|---|---|---|---|---|---|
| katlain | ekakau | himiri | fua-isani | a-isani-pe | ava-isani |
| fishing.line | something | many | carry-and | get-and-? | go.up-and |

'The mother returns, the mother calls, and the children run down to the mother, some carry blocks of wood, some carry fishing line and many other things, they get them and go up.'

Fishing 12

| Ava'isani, | ekakau | himiri | o'i'isani | luerama, | narakau | era | lorokaraha, | apava'a |
|---|---|---|---|---|---|---|---|---|
| ava-isani | ekakau | himiri | o'i-isani | luera-ma | narakau | era | loroka-ra-ha | apa-va'a |
| go.up-and | something | many | put-and | then-LOC | food | 3s | complete-IRR-3sS | after-so |

| mana | nane | ɪ'ɪ'isani. |
|---|---|---|
| ma-na | nane | ɪ'ɪ-isani |
| come-? | fish | burn-and |

'They go up and put the many things away, and right then when the food is completed, after they come and cook the fish.'

Fishing 13

| Nane | ɪ'ɪ'isani | nanero | araraha, | soa'oki'ao | o'oka | ve'isanipe | neisani, | oki. |
|---|---|---|---|---|---|---|---|---|
| Nane | ɪ'ɪ-isani | nane-ro | ara-ra-ha | soa'oki'ao | o'o-ka | ve'i-isani-pe | na-isani | oki |
| fish | burn-and | fish-ERG | burn-IRR-3sS | together | gather-3sS | sit-and-? | eat-and | one |

| fahama | o'i'isani. |
|---|---|
| faha-ma | o'i-isani |
| platform-LOC | put-and |

'When the fish is cooked, they sit down together and eat and put a few on the platform.'

Fishing 14

| Fari | au'i'i | ë'ama | mana | oreka. |
|---|---|---|---|---|
| Fari | au-'i'i | ë'a-ma | ma-na | ore-ka |
| story | short-very | that-LOC | come-? | finish-3sS |

'The very short story has come to the end.'

*Gardening*

Gardening 1

| Opa | haima | ika | la'umenupe, | ɪ'ɪmenuma | ararahaveha, | oharo | hehemenuma |
|---|---|---|---|---|---|---|---|
| Opa | haima | ika | la'u-m-'enu-pe | ɪ'ɪ-m-'enu-ma | ara-ra-ha-veha | oharo | hehe-m-'enu-ma |
| first | bush | self | clean-?-1pS-? | burn-?-1pS-LOC | burn-IRR-3sS-when | tree | clear-?-1pS-LOC |

| lorokarahaveha, | faura | menu | va'a. |
|---|---|---|---|
| loroka-ra-ha-veha | faura | m-'enu | va'a |
| complete-IRR-3sS-when | garden | ?-1pS | so |

'First we clean the bush itself, burn the grass and when it is burned, clear the trees and when it is complete, do the gardening.'

Gardening 2

| | | | | | |
|---|---|---|---|---|---|
| Noa'au, | eisi | lire'au, | hau'ani | ore'au, | o'imenu. |
| noa-'au | eisi | lire-'au | hau'ani | ore-'au | o'i-m-'enu |
| taro.sp-PL | banana | sucker-PL | sweet.potato | leaf-PL | put-?-1pS |

'We put in the taro suckers, banana suckers, and sweet potato leaves.'

Gardening 3

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| La'imenuma | lakarahaveha, | ona | vorivori | isani | laka | isani | va'a. |
| la'i-m-'enu-ma | laka-ra-ha-veha | ona | vorivori | isani | laka | isani | va'a |
| plant-?-1pS-LOC | bear.fruit-IRR-3sS-when | go | big | and | bear.fruit | and | so |

'When we plant it and it bears fruit, when it grows bigger and bears fruit.'

Gardening 4

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Laka | isani | eisi | lakarahama | amamenu, | noa | lakarahama | |
| Laka | isani | eisi | laka-ra-ha-ma | ama-m-'enu | noa | laka-ra-ha-ma | |
| bear.fruit | and | banana | bear.fruit-IRR-3sS-LOC | hit-?-1pS | taro.sp | bear.fruit-IRR-3sS-LOC | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| noa | fereamenu | pirikari | ĕa'ĭ'ao, | pirikari | ĕ'ĕmenupe | va'a, | laka | ĕ'ĕmenu. |
| noa | ferea-m-'enu | pirikari | ĕa'ĭ'ao | pirikari | ĕ'ĕ-m-'enu-pe | va'a | laka | ĕ'ĕ-m-'enu |
| taro.sp | pull-?-1pS | taro.sp | same | taro.sp | dig-?-1pS-? | so | bear.fruit | dig-?-1pS |

'It bears fruit, when the bananas bear fruit we cut them, when the taros bear fruit we pull the taros, do the same with the other taros, we dig up the taros, we dig the ones that bear fruit.'

Gardening 5

| | | | | | |
|---|---|---|---|---|---|
| Naume | la'imenu | noa | lire | ĕa'ĭ'ao | fereamenupe. |
| Naume | la'i-m-'enu | noa | lire | ĕa'ĭ'ao | ferea-m-'enu-pe |
| again | plant-?-1pS | taro.sp | sucker | same | pull-?-1pS-? |

'We pull the taro suckers again and plant them.'

Gardening 6

| | | | | | |
|---|---|---|---|---|---|
| Lakarahaveha | hove'arahaveha | oreka | faura | va'a | oreka. |
| laka-ra-ha-veha | hove'a-ra-ha-veha | ore-ka | faura | va'a | ore-ka |
| bear.fruit-IRR-3sS-when | correct-IRR-3sS-when | finish-3sS | garden | so | finish-3sS |

'When it bears fruit and is all right, the garden is finished, it is finished.'

*Weaving*

Weaving 1

| | | | |
|---|---|---|---|
| Keta | moha | ika | au'inana. |
| Keta | moha | ika | au'i-nana |
| mat | with | self | say-? |

'My talking starts with the mat.'

Weaving 2

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Keta | asi'enu, | a'enupe | mana | larema | o'i'enu, | ane | a'enu, | keta | uri'enu. |
| Keta | asi-'enu | a-'enu-pe | ma-na | lare-ma | o'i-'enu | ane | a-'enu | keta | uri-'enu |
| pandanas | cut-1pS | get-1pS-? | come-? | sun-LOC | put-1pS | rubbish | get-1pS | mat | weave-1pS |

'Cut the mat, we bring it to dry in the sun, remove the useless part (thorns), weave the mat.'

Weaving 3

Keta moha oka'ima ëa'a.
Keta moha oka'i-ma ëa'a
mat with side-LOC that.all

'That's all about the mat.'

Weaving 4

Ape amere.
Ape amere
for skirt

'Now the skirt.'

Weaving 5

Amere ahi'enu, ane a'enu, oura'enu, hahe'enu, muhu'enupe larema o'i'enu veha
Amere ahi-'enu ane a-'enu oura-'enu hahe-'enu muhu-'enu-pe lare-ma o'i-'enu veha
skirt cut-1pS rubbish get-1pS remove-1pS take.off-1pS rub-1pS-? sun-LOC put-1pS when

hara'oha veha amere uri'enu, mo'orea'enu.
hara'o-ha veha amere uri-'enu mo'orea-'enu
dry-3sS when skirt weave-1pS tie-1pS

'Cut the skirt, get the rubbish and remove it, take it off, rub the grass and put in the sun, when dry, weave the skirt, tie it.'

Weaving 6

Mo'orea'enuma ä'u muruä'u esira ekau ëa'a.
mo'orea-'enu-ma ä'u muru-ä'u esi-ra ekau ëa'a
tie-1pS-LOC woman girl-woman wear-IRR something that.all

'When it is tied, women and girls can wear something, that's all.'

Weaving 7

Fa'ari ëa'ï'ao, keta asi'enupe mana larema o'i'enu, ane a'enu fa'ari va'a
Fa'ari ëa'ï'ao keta asi-'enu-pe ma-na lare-ma o'i-'enu ane a-'enu fa'ari va'a
basket same pandanas cut-1pS-? come-? sun-LOC put-1pS rubbish get-1pS basket so

ä'uvoro hava'u lare va'a uri'enu.
ä'u-voro hava'u lare va'a uri-'enu
woman-PL show day so weave-1pS

'The basket is the same, cut the pandanas come put it in the sun, remove the rubbish, the basket women weave for the show day.'

Weaving 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Felosip | ä'u | la'i | so'a'oki'au | o'oka | ve'i | anipe | hava'u | keta | au | amere | la'i |
| felosip | ä'u | la'i | so'a'oki'au | o'o-ka | ve'i | anipe | hava'u | keta | au | amere | la'i |
| fellowship | woman | together | together | gather-3sS | sit | then | show | mat | PL | skirt | together |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| uri'enu, | fa'ari | uri'enu | kou'ara | ma'i | hava'u'enu, | koi'ara | o'i'enu, | koi'ara |
| uri-'enu | fa'ari | uri-'enu | kou'ara | ma'i | hava'u-'enu | koi'ara | o'i-'enu | koi'ara |
| weave-1pS | basket | weave-1pS | some | go.down | show-1pS | another | put-1pS | another |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| hava'u'enu, | koi'ara | o'i'enu, | koi'ara | ema'ia | lira | veha | keta. |
| hava'u-'enu | koi'ara | o'i-'enu | koi'ara | ema'i-a | li-ra | veha | keta |
| show-1pS | another | put-1pS | another | prepare-get | sleep-IRR | when | mat |

'The fellowship women gather together and sit down then weave skirts for the weaving show, we weave some baskets for the show, put some aside, others prepare for sleeping.'

*Kikori Hunt*

Kikori Hunt 1

| | | | | | | |
|---|---|---|---|---|---|---|
| Kikorima | novere | warehavama | ona'enape | ë'ama | ve'i'ena | luerama. |
| Kikori-ma | nao-vere | warehava-ma | ona-'ena-pe | ë'a-ma | ve'i-'ena | luera-ma |
| Kikori-LOC | 1s-POSS | first-LOC | go-1sS-? | that-LOC | sit-1sS | then-LOC |

'My first time going and staying in Kikori.'

Kikori Hunt 2

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Nomaraforo | emerane'ani, | aika'u | au'i'ani, | "Nu'u | ao | ora'emenu, | nu'u'ani | evera | |
| nomara-fe-ro | emera-ne-'ani | aika'u | au'i-'ani | Nu'u | ao | ora'e-m-'enu | nu'u-'ani | evera | |
| in.law-PL-ERG | tell-1sO-2/3pS | now | say-2/3pS | 1p | 2s | show-?-1pS | 1p-2/3pS | dog | |

| | |
|---|---|
| o'oreraveha | ona'enu." |
| o'ore-ra-veha | ona-'enu |
| hunt-IRR-when | go-1pS |

'My in-laws told me, they said, "We will show you, we will go hunting with dogs."'

Kikori Hunt 3

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Ivi'ira | ma'ao, | evera | himiri | a'enupe | mana | ara'ama | üa'enu | lorokahaveha. |
| Ivi'ira | ma'ao | evera | himiri | a-'enu-pe | ma-na | ara'a-ma | üa-'enu | loroka-ha-veha |
| morning | early | dog | many | get-1pS-? | come-? | canoe-LOC | put-1pS | complete-3sS-when |

'Early in the morning we got many dogs, came and put them into the canoe, that was complete.'

Kikori Hunt 4

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Ë'ë | fehea'anipe, | ai | fa'arima | üaro'erama | soka | kaiaka | ama'u | ama'u'enu, |
| Ë'ë | fehea-'ani-pe | ai | fa'ari-ma | üa-ro'era-ma | soka | kaia-ka | ama'u | ama'u-'enu |
| coconut | husk-2/3pS-? | sago | basket-LOC | put-and-LOC | so | paddle-3sS | come.out | come.out-1pS |

| | | | | |
|---|---|---|---|---|
| ononoma | finu | pairavere | ë'ama | o'iamu'enu. |
| ona-RDP-ma | finu | paira-vere | ë'a-ma | o'i-amu-'enu |
| go-CONT-LOC | island | another-? | that-LOC | put-3sO-1pS |

' We husked coconut and puttting sago into baskets, so we paddled, coming out, we came out, going, we put the canoe there at another island.'

Kikori Hunt 5

| | | | | | | |
|---|---|---|---|---|---|---|
| Ara'a | lamuro'erama | nu'u | va'a | ure'enu, | evera | a'enupe. |
| Ara'a | lamu-ro'era-ma | nu'u | va'a | ure-'enu | evera | a-'enu-pe |
| canoe | plant-and-LOC | 1p | so | go.in-1pS | dog | get-1pS-? |

'We planted the canoe and went into the bush, we got the dogs.'

Kikori Hunt 6

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Ure'enupe | erahevere | kere'a | äo'a | hi'ivira | ha'eka, | ai | vorivori | voro | lea'ani, | oporo |
| ure-'enu-pe | erahe-vere | kere'a | äo'a | hi'ivira | ha'eka | ai | vorivori | voro | lea-'ani | oporo |
| go.in-1pS-? | 3p-POSS | path | swamp | big | very | sago | big | PL | stand-2/3pS | wood |

| | | |
|---|---|---|
| ore'ea, | ai | voro. |
| ore'ea | ai | voro |
| nothing | sago | PL |

'We went in, their path is a very big swamp, big sagos were standing, no trees, only sagos.'

Kikori Hunt 7

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Ë'a, | ai | lue | ë'a | äo'ama | leu'enu, | evera | o'ae | a | leu'enu. |
| Ë'a | ai | lue | ë'a | äo'a-ma | leu-'enu | evera | o'ae | a | leu-'enu |
| that | sago | in | that | swamp-LOC | go.around-1pS | dog | take | get | go.around-1pS |

'We went around in the sagos in that swamp, taking the dogs and going around.'

Kikori Hunt 8

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Leu, | leu | evera | erahe | ona | sa'i | ore'ea, | wä'ïra | ma'ao | aiparo | hi'ivira |
| Leu | leu | evera | erahe | ona | sa'i | ore'ea | wä'ï-ra | ma'ao | aiparo | hi'ivira |
| go.around | go.around | dog | 3p | go | not | long | go.down-IRR | just.then | pig | big |

| | | |
|---|---|---|
| kiviamu'ani. | | |
| kivi-amu-'ani | | |
| work-3sO-2/3pS | | |

'We went around and around, the dogs did not go around very long, just then they started chasing a big pig.'

Kikori Hunt 9

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aiparo | hi'ivira | a'enu, | evera | voro | omeamu'anima, | uriri'enupe | mana | akiva |
| Aiparo | hi'ivira | a-'enu | evera | voro | ome-amu-'ani-ma | uriri-'enu-pe | ma-na | akiva |
| pig | big | get-1pS | dog | PL | make-get-2/3pS-LOC | run-1pS-? | come-? | knife |

| | | | | | | |
|---|---|---|---|---|---|---|
| homamu'enu | lorokahaveha | aiparo | amu'enupe | ona | poema | o'iamu'enu. |
| homa-amu-'enu | loroka-ha-veha | aiparo | a-amu-'enu-pe | ona | poe-ma | o'i-amu-'enu |
| stab-3sO-1pS | complete-3sS-when | pig | get-3sO-1pS-? | go | side-LOC | put-3sO-1pS |

'Getting the big pig, the dogs chased the big pig, and running we came and stabbed the pig with the knife, after completed we got the pig and put it on the side.'

Kikori Hunt 10

| | | |
|---|---|---|
| Poema | o'iamu | lo'erama. |
| poe-ma | o'i-amu | lo'e-ra-ma |
| side-LOC | put-3sO | and-IRR-LOC |

'We put it on the side.'

Kikori Hunt 11

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Äë'a | aiparo | hi'ivira | uma'i | ama'uraveha | ara'avere, | heafo | ha'eka. |
| Äë'a | aiparo | hi'ivira | uma'i | ama'u-ra-veha | ara'a-vere | heafo | ha'eka |
| that | pig | big | very | come.out-IRR-when | canoe-? | struggle | very |

'When we tried to pull that very big pig out into the canoe it was very hard work.'

Kikori Hunt 12

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Aua | pirari | ore'ea, | nu'u | aua | ü'üka | pao'a | lamoha. |
| Aua | pirari | ore'ea | nu'u | aua | ü'üka | pao'a | lamo-ha. |
| child | few | nothing | 1p | child | two | one | only-3sS |

'There were not plenty of us, we were only three people.'

Kikori Hunt 13

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aiparo | uma'i | veriamu'a, | veriamu'a, | ama'u, | ama'u, | ama'u, | ama'u, | ama'u. |
| Aiparo | uma'i | veri-amu-'a | veri-amu-'a | ama'u | ama'u | ama'u | ama'u | ama'u |
| pig | very | pull-3sO-? | pull-3sO-? | come.out | come.out | come.out | come.out | come.out |

'We pulled and pulled the pig, coming out, coming out, coming out, coming out, coming out.'

Kikori Hunt 14

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Vai | pairavere | o'iamu'enu | ara'avere | kere'a | uma'i | heka | ha'eka, | vai | pairama |
| Vai | paira-vere | o'i-amu-'enu | ara'a-vere | kere'a | uma'i | heka | ha'eka | vai | paira-ma |
| river | another-? | put-3sO-1pS | canoe-POSS | path | very | far | very | river | another-LOC |

ve'iha.
ve'i-ha
sit-3sS

'We put it at another river, the canoe path was very far on the other side of the river.'

Kikori Hunt 15

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aiparo | ë'a, | vai | paira | vere | o'iamu'enupe | aua | koi'ara | ara'a | haveha | ero'ani. |
| Aiparo | ë'a | vai | paira | vere | o'i-amu-'enu-pe | aua | koi'ara | ara'a | haveha | ero-'ani |
| pig | that | river | another | ? | put-3sO-1pS-? | child | another | canoe | and.then | turn-2/3pS |

'We put that pig to the other side of the river, some boys went around for the canoe.'

Kikori Hunt 16

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Aua | koi'ara | ona | ara'a | amu'ani, | va'a, | mue'ani | mue'enupe | mana | aiparo |
| Aua | koi'ara | ona | ara'a | a-amu-'ani | va'a | mue-'ani | mue-'enu-pe | ma-na | aiparo |
| child | another | go | canoe | get-3sO-2/3pS | so | return-2/3pS | return-1pS-? | come-? | pig |

üamu'enupe.
üa-amu-'enu-pe
put-3sO-1pS-?

'Other boys went to get the canoe, we returned, returning we put the pig.'

Kikori Hunt 17

| | | | | | |
|---|---|---|---|---|---|
| Aiparo | hi'ivika | ha'eka, | üamu'enu | lorokahaveha | soka. |
| Aiparo | hi'ivika | ha'eka | üa-amu-'enu | loroka-ha-veha | soka |
| pig | big | very | put-3sO-1pS | complete-3sS-when | so |

'The very big pig, we put it in finished.'

Kikori Hunt 18

| | |
|---|---|
| Kaiaka | mue'enu. |
| kaia-ka | mue-'enu |
| paddle-3sS | return-1pS |

'Paddling we returned.'

Kikori Hunt 19

| | | | | | | |
|---|---|---|---|---|---|---|
| Kaiaka | mano, | mano, | mano | mana | omema | lo'uma. |
| kaia-ka | ma-no | ma-no | ma-no | ma-na | ome-ma | lo'u-ma |
| paddle-3sS | come-? | come-? | come-? | come-? | something-LOC | village-LOC |

'Paddling we came, came, came, came, to somewhere, to the village.'

Kikori Hunt 20

| | | | | | |
|---|---|---|---|---|---|
| Lo'uma | o'iamu | lo'erama | aiparo | va'a | havamu'enu. |
| lo'u-ma | o'i-amu | lo'e-ra-ma | aiparo | va'a | hava-amu-'enu |
| village-LOC | put-3sO | and-IRR-LOC | pig | so | cut-3sO-1pS |

'Put it in the village and then cut the pig.'

Kikori Hunt 21

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aiparo | havamu'enuma, | erahe | ore | ë'a | aiparo | uma'i, | a'onara | ë'ama. |
| Aiparo | hava-amu-'enu-ma | erahe | ore | ë'a | aiparo | uma'i | a-ona-ra | ë'a-ma |
| pig | cut-3sO-1pS-LOC | 3p | NEG | that | pig | very | get-go-IRR | that-LOC |

'We cut the pig, they (in-laws) did not get the pig and go.'

Kikori Hunt 22

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Vere'ani | ë'a | koru | i'i'ao | a | lo'erama | au'i'ani, | "Ne'e | overe | aiparo," |
| vere-'ani | ë'a | koru | i'i-'ao | a | lo'e-ra-ma | au'i-'ani | Ne'e | ao-vere | aiparo |
| want-2/3pS | that | piece | small-only | get | and-IRR-LOC | say-2/3pS | this | 2s-POSS | pig |

| | | | | | |
|---|---|---|---|---|---|
| o'ani, | "a'a | one | ao | ë'aveha | herafohe." |
| o'i-'ani | a'a | ona-e | ao | ë'a-veha | herafo-he |
| say-2/3pS | take | go-IMP? | 2s | that-when | struggle-2sS |

'They got the small pieces that they wanted and then said, "This is your pig," they said, "Take it and go because you did hard work." '

Kikori Hunt 23

| | | | | |
|---|---|---|---|---|
| Soka | aiparo | va'a | a'ama'enu, | ëama. |
| Soka | aiparo | va'a | a'a-ma-'enu | ëa-ma |
| so | pig | dead | take-come-1pS | house-LOC |

'So we brought the pig, brought it to the house.'

Kikori Hunt 24

| | | |
|---|---|---|
| A'ama'enupe | uri'enupe | na'enu. |
| a'a-ma-'enu-pe | uri-'enu-pe | na-'enu |
| take-come-1pS-? | cook-1pS-? | eat-1pS |

'We cooked it, and ate it.'

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Kikori Hunt 25

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Ë'aveha | erahevere | kere'a | aiparo | one | karora, | erahevere | kere'a | namaia. |
| ë'a-veha | erahe-vere | kere'a | aiparo | one | karo-ra | erahe-vere | kere'a | namaia |
| that-when | 3p-POSS | path | pig | cannot | find-IRR | 3p-POSS | path | good |

'Therefore their place is good, you do not need to look for pigs.'

*The Cuscus*

Cuscus 1

| | | | | |
|---|---|---|---|---|
| Kurokuro | erahe | oharo | moha | ve'i'ani. |
| Kurokuro | erahe | oharo | moha | ve'i-'ani |
| cuscus | 3p | tree | with | sit-2/3pS |

'Cuscuses sit in trees.'

Cuscus 2

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Eheraerahaveha | | erahe | avaha | loku | kine'ao | neisani, | loku | moha | |
| ehera-e-ra-ha-veha | | erahe | ava-ha | loku | kine-'ao | na-isani | loku | moha | |
| hungry-2/3pO-IRR-3sS-when | | 3p | go.up-3sS | pawpaw | ripe-only | eat-and | pawpaw | with | |
| ava'isanipe | loku | kine'ao | neisani, | wä'ɪ'isani | ona | oharo | fuani | koi'ara | ëa'ɪ'ao |
| ava-isani-pe | loku | kine-'ao | na-isani | wä'ɪ-isani | ona | oharo | fuani | koi'ara | ëa'ɪ'ao |
| go.up-and-? | pawpaw | ripe-only | eat-and | go.down-and | go | tree | seed | another | same |

| | | | | | |
|---|---|---|---|---|---|
| neisani, | wä'ɪ'isanipe | ona | oharo | pairavere | avaraha. |
| na-isani | wä'ɪ-isani-pe | ona | oharo | paira-vere | ava-ra-ha |
| eat-and | go.down-and-? | go | tree | another-? | go.up-IRR-3sS |

'When they are hungry they go up and eat only ripe pawpaw, they go up with the pawpaw and eat only ripe pawpaw, they go down and then up another fruit tree in the same way, they go up and eat, they go down and going to another tree go up.'

Cuscus 3

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Oharo | pairavere | avarakape | ëa'ɪ'ao, | oharo | fuani | ë'a'ao | namaiarahama | era | ve'ira |
| Oharo | paira-vere | ava-ra-kape | ëa'ɪ'ao | oharo | fuani | ë'a-'ao | namaia-ra-ha-ma | era | ve'i-ra |
| tree | another-? | go.up-IRR-and | same | tree | seed | that-only | good-IRR-3sS-LOC | 3s | sit-IRR |

| | | |
|---|---|---|
| kape | ao | naraha. |
| kape | ao | na-ra-ha |
| and | 2s | eat-IRR-3sS |

'They go up another tree the same way, when the fruit is good, it will stay in only that tree and just eat.'

*Working in the Church*

Church 1

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Nao | 26 | sioro, | nao | ekalesia | kivia'ena | manomanoma | aika'u. |
| Nao | 26 | sioro | nao | ekalesia | kivi-a-'ena | ma-no-RDP-ma | aika'u |
| 1s | 26 | year | 1s | church | work-?-1sS | come-?-CONT-LOC | now |

'I have worked for the church for 26 years.'

Church 2

| | | | | | |
|---|---|---|---|---|---|
| Ne'e | lao | üa'iro | maha, | nao | hafuneha. |
| Ne'e | lao | üa'i-ro | ma-ha | nao | hafu-ne-ha |
| this | European | someone-ERG | come-3sS | 1s | meet-1sO-3sS |

'This European has come and has met me.'

Church 3

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kava | novere | fari | la'i | au'i | nao, | ekalesia | luema | ve'i'ena | sioro | la'i | au'inao. |
| Kava | nao-vere | fari | la'i | au'i | nao | ekalesia | lue-ma | ve'i-'ena | sioro | la'i | au'i-nao |
| so | 1s-POSS | story | FUT | say | 1s | church | in-LOC | sit-1sS | year | FUT | say-1s |

'So I'm telling my story of my years staying in the church.'

Church 4

| | | | | | |
|---|---|---|---|---|---|
| Sioro | hove'a | 26 | sioro, | manomanoma | ne'e. |
| Sioro | hove'a | 26 | sioro | ma-no-RDP-ma | ne'e |
| year | correct | 26 | year | come-?-CONT-LOC | this |

'Twenty-six years have come to now.'

*My Life*

My Life 1

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Nao | aua'aua | moha | ma'uri | fehaha | nao | ore | hove'ara, | novere | ma'uri. |
| Nao | aua-RDP | moha | ma'uri | feha-ha | nao | ore | hove'a-ra | nao-vere | ma'uri |
| 1s | child-CONT | with | life | spoil-3sS | 1s | NEG | be.fit-IRR | 1s-POSS | life |

'The children haven't been looking after me, I'm not strong, my life.'

My Life 2

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Ë'aveha | aika'u, | nao | lao | üa'i | ne'e | avaha | novere | fari | ne'e | au'i'ena. |
| ë'a-veha | aika'u | nao | lao | üa'i | ne'e | ava-ha | nao-vere | fari | ne'e | au'i-'ena |
| that-when | now | 1s | European | someone | this | go.up-3sS | 1s-POSS | story | this | say-1sS |

'That's why this European man came so I'm telling him my story.'

My Life 3

| | | | | |
|---|---|---|---|---|
| Ë'aveha | novere | ma'uri | ore | hove'ara. |
| ë'a-veha | nao-vere | ma'uri | ore | hove'a-ra |
| that-when | 1s-POSS | life | NEG | be.fit-IRR |

'That's why my life is not fit.'

My Life 4

| | | | |
|---|---|---|---|
| Ma'uri | aua | ore | koarainera. |
| Ma'uri | aua | ore | koarai-ne-ra |
| life | child | NEG | help-1sO-IRR |

'The children did not help my life.'

My Life 5

| | |
|---|---|
| Ma'uri | fehaha. |
| Ma'uri | feha-ha |
| life | spoil-3sS |

'My life is spoiled.'

My Life 6

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Fehahaveha | novere | lofo, | anivere | lofo, | hove'a | ne'e | lofo | ore | hove'anera. |
| feha-ha-veha | nao-vere | lofo | ani-vere | lofo | hove'a | ne'e | lofo | ore | hove'a-ne-ra |
| spoil-3sS-when | 1s-POSS | strong | old-? | strong | be.fit | this | strong | NEG | be.fit-1sO-IRR |

'Before it was spoiled, my strength was all right, this fitness is not strong, fitness is not strong.'

My Life 7

| | | |
|---|---|---|
| Lofo | ore | hove'anera. |
| Lofo | ore | hove'a-ne-ra |
| strong | NEG | be.fit-1sO-IRR |

'My fitness is not strong.'

My Life 8

| | | | | | | |
|---|---|---|---|---|---|---|
| Ë'aveha | naro | ona'ena | ma'ena | luema, | ore | hove'ara. |
| ë'a-veha | nao-ro | ona-'ena | ma-'ena | lue-ma | ore | hove'a-ra |
| that-when | 1s-ERG | go-1sS | come-1sS | in-LOC | NEG | be.fit-IRR |

'That's why when I go and come in I'm not fit.'

My Life 9

| | | | | |
|---|---|---|---|---|
| Ë'aveha | novere | fari | ne'e | oreka. |
| ë'a-veha | nao-vere | fari | ne'e | ore-ka |
| that-when | 1s-POSS | story | this | finish-3sS |

'That's why my story ends here.'

*A Prayer*

Prayer 1

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Overe | ini | ane'e | vearovaekavere | auma, | vearovaekavere | luema | foa | kona | luema. |
| ao-vere | ini | ane'e | vearovaeka-vere | au-ma | vearovaeka-vere | lue-ma | foa | kona | lue-ma |
| 2s-POSS | eye | here | earth-? | on-LOC | earth-? | in-LOC | four | corner | in-LOC |

'Your eye is here on the earth, in the earth in the four corners.'

Prayer 2

| | | | | | |
|---|---|---|---|---|---|
| Overe | ini | era | ovava | hi'ivira | ha'eka. |
| ao-vere | ini | era | ovava | hi'ivira | ha'eka |
| 2s-POSS | eye | 3s | bright | big | very |

'Your eyes are very bright.'

Prayer 3

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arua'u | moha | aro | mape | ma'i | vera'ama | erahevere | upu | ekeke, | erahevere | fera | |
| Arua'u | moha | aro | mape | ma'i | vera'ama | erahe-vere | upu | eke-RDP | erahe-vere | fera | |
| person | with | head | from | go.down | body | 3p-POSS | hand | finger-PL | 3p-POSS | leg | |
| ekeke | himiri, | erahevere | hohiri | fuani, | eravere | hereane | himiri | ao | kuri'a | ereahe. | |
| eke-RDP | himiri | erahe-vere | hohiri | fuani | era-vere | hereane | himiri | ao | kuri'a | erea-he | |
| finger-PL | many | 3p-POSS | heart | seed | 3s-POSS | intestine | many | 2s | already | see-2sS | |

'You already see people from their head going down to the body, their fingers and many toes, their heart and intestines.'

Prayer 4

| | | | | | |
|---|---|---|---|---|---|
| Aika'u | ivi'ira, | overe | nenu | ũahe | veru |
| Aika'u | ivi'ira | ao-vere | nenu | ũa-he | veru |
| now | morning | 2s-POSS | give | put-2sS | gift |

'This morning you gave your gift.'

Prayer 5

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aika'u | vere | testimoni | luema, | Miriam | Ori, | era | testifaiha | eravere | ae, | ma'uri, |
| Aika'u | vere | testimoni | lue-ma | Miriam | Ori | era | testifai-ha | era-vere | ae | ma'uri |
| now | POSS | testimony | in-LOC | Miriam | Ori | 3s | testify-3sS | 3s-POSS | word | life |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| era | eka | ve'iha | ma'uri | vere | nuvere | maienama | au'iha. |
| era | eka | ve'i-ha | ma'uri | vere | nu'u-vere | maiena-ma | au'i-ha |
| 3s | sick | sit-3sS | life | POSS | 1p-POSS | front-LOC | say-3sS |

'In today's testimony Miriam Ori testified about her life, she was staying sick, she told her life story in front of us.'

Prayer 6

| | | | | | |
|---|---|---|---|---|---|
| Nuro | mo'erape, | ao | sukerere | ae'eraveha. | |
| nu'u-ro | mo'e-ra-pe | ao | sukerere | ae-'e-ra-veha | |
| 1p-ERG | listen-IRR-? | 2s | belief | someone-2sO-IRR-when | |

'We will listen and believe you.'

Prayer 7

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Poe | ekakau | himiri, | poe | kure'ai | himiri | one | la'araveha. |
| Poe | ekakau | himiri | poe | kure'ai | himiri | one | la'a-ra-veha |
| side | something | many | side | influence | many | cannot | think-IRR-when |

'When many side things, side things influence us, we will not think of them.'

Prayer 8

| | | | |
|---|---|---|---|
| E'a | testimoni | namaia | a'amaha. |
| E'a | testimoni | namaia | a'a-ma-ha |
| that | testimony | good | take-come-3sS |

'She brought that good testimony.'

Prayer 9

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| E'a | testimoni | luema | era | chalenj | hi'ivira | ha'eka | nenu | ũaha | aika'u | ivi'ira | luema, |
| E'a | testimoni | lue-ma | era | chalenj | hi'ivira | ha'eka | nenu | ũa-ha | aika'u | ivi'ira | lue-ma |
| that | testimony | in-LOC | 3s | challenge | big | very | give | put-3sS | now | morning | in-LOC |

| | | | | | |
|---|---|---|---|---|---|
| ne'e | ẽa | vere | ve'i'enu | arua'u | himiri. |
| ne'e | ẽa | vere | ve'i-'enu | arua'u | himiri |
| this | house | POSS | sit-1pS | person | many |

'In that testimony she gave a very big challenge to us this morning, the many people sitting in this house.'

Prayer 10

| | | |
|---|---|---|
| Erahe | vire | fa'apai'amo'e. |
| Erahe | vire | fa'apai-'amo'e |
| 3p | mind | open-3p |

'You open their minds.'

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Prayer 11

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Ë'aveha | napara | ao | tankiu | ini'e'enu, | ne'e | ae | himiri. |
| ë'a-veha | napara | ao | tankiu | ini-'e-'enu | ne'e | ae | himiri |
| that-when | father | 2s | thanks | give-2sO-1pS | this | word | many |

'That's why, father, we give thanks for you making these many words.'

Prayer 12

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aro | o'ekema, | aro | ë'a | aevere | luema | leve, | aro | o'ekema |
| ao-ro | o'e-ke-ma | ao-ro | ë'a | ae-vere | lue-ma | lea-ve | ao-ro | o'e-ke-ma |
| 2s-ERG | make-2sS-LOC | 2s-ERG | that | word-POSS | in-LOC | stand-? | 2s-ERG | make-2sS-LOC |

| | | | |
|---|---|---|---|
| o'ekema | haekekae, | lofohae | siahuhae. |
| o'e-ke-ma | haeke-ka-e | lofo-ha-e | siahu-ha-e |
| make-2sS-LOC | strengthen-3sS-IMP | strong-3sS-IMP | power-3sS-IMP |

'You stand in those words to make us strong, with strength and power.'

Prayer 13

| | | | | | |
|---|---|---|---|---|---|
| Au'arari, | nuvere | no'i | ae | fihi | ëa'a. |
| Au'arari | nu'u-vere | no'i | ae | fihi | ëa'a |
| God | 1p-POSS | ask | word | small | that.all |

'God this is our small request, that's all.'

Prayer 14

Amen.
amen
amen

'Amen.'

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# Pronouns in Mexican Sign Language

Marilyn Plumlee

*Pronouns in Mexican Sign Language (MSL) can be divided into two distinct classes: the manual pronouns, formed by configurations and movements of the hand, and the non-manual pronouns, formed by means of eye movements and body shifts which carry linguistic content. Within each class, several types of pronouns are found. This paper discusses the morphology of various types within each class and provides examples which illustrate their use in MSL discourse.*

*MSL speakers constitute a linguistic minority who are in frequent contact with a majority group using Spanish, the language of higher prestige in the society at large. An additional focus of this paper is thus the identification of the morphological and syntactic features of MSL pronouns which have resulted from extensive contact with the Spanish language.*

## 1. Introduction

Mexican Sign Language (MSL) has two distinct modes of expressing pronominal relationships. There are, first of all, the manual pronouns, i.e. actual signs formed by configurations and movements of the hand; secondly, there are the non-manual pronouns, formed by means of linguistically significant eye gazes and body shifts. The manual pronouns, for the most part, are easily distinguished morphemes. The linguistic analysis of the non-manuals, however, is not so easily accomplished. Fluent signers are themselves most often not consciously aware that they use non-manual pronouns extensively. Indeed, it was only after linguists had devoted extensive research efforts to the topic that non-manual markers were identified as a form of pronominalization in American Sign Language (Friedman 1975, Liddell 1978, Liddell 1980, Baker and Padden 1978).

This paper provides a brief sketch of the manual and non-manual pronouns identified in MSL and discusses some of the syntactic uses of each type. The frequently occurring phenomenon of pronoun deletion is also illustrated and discussed.

A study of pronominal usage in MSL cannot remain isolated from the sociolinguistic situation of the language, however. The relevant factor is the continuum of bilingualism among MSL speakers, ranging from nearly total monolingual MSL use to nearly total bilingualism in Spanish, the prestige spoken language of the wider community (Eatough 1992, Faurot et al. 1992:6-10). With respect to pronouns, the pervasiveness of the Spanish language in the daily lives of MSL users manifests itself primarily in the relexification of some Spanish pronominals into the MSL system, which in turn results in syntactic variability.

The study of pronouns in MSL is thus fruitful not only for the linguistic phenomena which it illustrates and its bearing on cross-linguistic pronominal representations in signed languages, but also for the insights it provides into the sociolinguistic situation among the Mexican deaf.

The language associate who provided the data used as examples in this paper was Lilia Laura Herros de Alcántara of Mexico City, a fluent bilingual in MSL and Spanish. The data was collected in the summer of 1993.

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## 2. Morphology of Pronouns.

The classification of pronouns into manual and non-manual can be further subdivided.

### *2.1 Manual pronouns.*

Five morphological types of manual signs are documented, and each is discussed in turn: indexical pronouns, incorporated pronouns, classifiers, initialized pronouns, and possessive pronouns.

#### *2.1.1 Indexical Pronouns.*

Indexical pronouns indicate the referent by means of pointing, usually with the index finger for singular referents, or by a combination of fingers for plural referents. Data obtained provides clear documentation of manual indexical pronouns to refer to 1sg, 2sg, 3sg, 3dl and 3pl. We now look at examples of each.

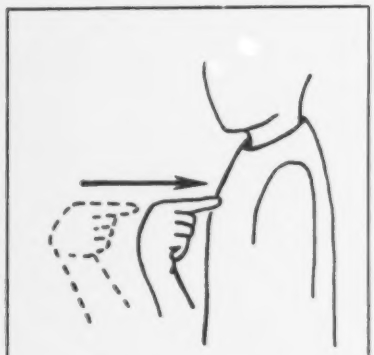

**Figure 1: INDEX-1**

The INDEX-1 pronoun (see Figure 1), which is formed by the index finger touching the speaker's chest, is used primarily[1] to represent a 1sg subject, as in example (1):

(1) INDEX-1 ESTAR MAS CONTENTO
1sg to be more happy
*'I am very happy.'*[2]

A variant of INDEX-1 is INDEX-1b, in which two or more fingers touch the speaker's chest. This was observed in casual speech, as illustrated in (2):

(2) INDEX-1b OCCUPADO NO-PODER IR-3 NADAR
1sg busy can't go swimming
*'I'm busy and can't go swimming.'*

INDEX-2 (see Figure 2), which is formed with the index finger pointing at the interlocutor, is used most frequently to represent a 2sg subject, as illustrated in (3):

(3) INDEX-2 NO BIEN TOCAR
2sg not well push
*'You didn't push hard enough.'*

---

[1] It may also be used to indicate a possessor, as discussed below in connection with example (8).

[2] It was decided to gloss the examples which illustrate the structure of MSL with Spanish words accompanied by an English translation of the gloss, followed by an English free translation of the meaning of the sentence. The decision to use Spanish for the glosses was motivated by two factors: (1) the examples would thus be accessible to both Spanish and English speakers, particularly to deaf people who can read Spanish; and (2) the influence of the Spanish language on MSL would be more transparent, particularly with respect to initialization of signs.

Fingerspelled words are indicated by dashes between the letters: "M-A-Y-O".

[3] Even when directional verbs are used in the imperative, the pronominal arguments remain visible, as the following example illustrates:

INDEX-3 is executed by pointing with the index finger to an actual or assigned location of the third person referent. When used to represent an absent singular referent, it differs syntactically from INDEX-1 and INDEX-2 in that for INDEX-3, normally the referent must first be identified, then referred to anaphorically by the indexical pronoun, as example (4) illustrates:

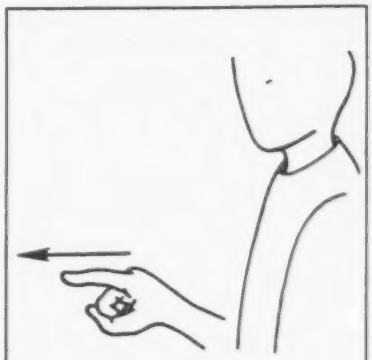

**Figure 2: INDEX-2**

(4) PADRE INDEX-3 RESPONSABLE
father 3sg responsible
*'The father is responsible.'*

When the 3sg referent is physically present, INDEX-3 can be used as INDEX-1 and INDEX-2, i.e. without naming the referent, as the pointing would sufficiently identify the referent. However, examples of cataphoric pronominalization have also been noted, as in (5), where INDEX-3 precedes the identification of the referent. Whether used in anaphoric or cataphoric pronominalization, INDEX-3 representing an absent referent requires that that referent be identified.

(5) INDEX-3 INDEX-1 COMPAÑERO INDEX-1 INDEX-3
3sg 1sg friend 1sg 3sg

INDEX-1 MUCHO AMIGO COMPAÑERO
1sg very much friend good friend

2hds-CL:child:rising 2hds-CL:child:rising
2-grow-up-together 2-grow-up-together

ACORDARSE COMPAÑERO.
remember friend

*'My friend and I, my very good friend, we grew up together, we were kids together, I remember (that) friend.'*

Indexicalization to represent a 3pl pronoun has been observed in three different forms. The first is labeled INDEX-3-arc, and is formed by means of the index finger tracing the shape of a horizontal semicircle in the neutral signing space, accompanied by an eye gaze focused just beyond the circumference of the circle traced in the air, as illustrated in (6):

(6) DEPENDER INDEX-3-arc PERSONAS GUSTAR
depends 3pl people like/please
*'It depends on what people like.'*

The second form of the 3pl pronoun is labeled INDEX-3-many. This is executed by the signer pointing to several consecutive locations along an imaginary horizontal arc in the neutral signing space, as illustrated in (7):

(7) UNOS SORDOS ... CLARO PARA INDEX-3-many // PORQUE
some deaf ... clear for 3pl // because

INDEX-3 TODAVIA NO D-D ... PODER EQUIVOCARSE
3pl not-yet not ? ... able make-a-mistake
*'[You have to sign] clearly for some deaf, because they don't always get it (?) and could misunderstand.'*

The third form, INDEX-3, reiterating a previously specified 3pl referent, as in example (7), above, is identical in form to INDEX-3 referring to a 3sg referent. In this context, it appears appropriate to translate INDEX-3 as 'they', rather than 'he' or 'she'.

In addition to the uses illustrated above, indexical pronouns have also been observed to signify the possessive. Example (8), below, illustrates INDEX-1 used for the 1sg possessive pronoun:

(8) INDEX-1 HERMANA TOCAR ESPERAR-ESPERAR
1sg sister ring the bell wait
*'My sister buzzed [again], and we waited.'*

INDEX-2 and INDEX-1b have also been observed in possessive usage corresponding to that of INDEX-1.

Based on pronominal usage in a related language, American Sign Language (ASL), one might expect to find indexical pronouns for the dual and for the plural with specific numbers of referents. However, only meager data has been obtained to confirm the existence of indexical duals, and no evidence at all has been found for indexical plurals referring to specific numbers in MSL.

Examples of indexical 3dl were found in the following utterance:

(9) PERO J M NO MAS CONTENTO POQUITO CONTENTO
but Josue Miryam not more happy little happy

PORQUE 3dl CANSADO CONDUCIR // 3dl
because those-2 tired drive those-2

DECIR CANSADO SENTARSE CONDUCIR neg + chin
say drive sit drive not good

*'Josué and Miryam are not really thrilled about the trip, because they say it will be tiring to sit still for so long during the drive.'*

Here the 3dl was formed by making a palm-up 'V' with the fingers pointing to the right to indicate third person and signed with a slight shaking movement.

An example of a construction where indexical plurals would be expected in ASL, but where they were not found in MSL, is given in (10):

(10) intns PROXIMO MARTES intns M M
intns next Tuesday intns Marilyn, Miguel,

S B ... IR-3 ... EXAMEN
Shelley Bev go test

*'Wow, next Tuesday Marilyn, Mike, Shelley, and Bev will be taking a test.'*

In ASL, it is very likely that either the 3pl or the INDEX-3 for four specified people would have been used as a resumptive pronoun after the list of names.

The lack of attested indexical representation of specific numbers of plural referents in this study's corpus, which contrasts sharply with their frequent occurrence in ASL, leads to the tentative conclusion that they do not exist in MSL, but a larger corpus of data might reveal their presence.

*2.1.2 Incorporated pronouns*

Pronouns are frequently incorporated as the subject and object of the class of verbs which includes DECIR 'tell, answer', MIRAR 'look at', PREGUNTAR 'ask', and DAR 'give'. The

pronouns are not overtly signed as separate morphemes, but the direction of the movement of the verb to or from the actual or assigned location of the referent signals their presence. They are therefore classified with the manual pronouns, since they are rendered through manual movement and configuration. This class of verbs is known in sign language linguistics as directional verbs, because of the obligatory incorporation of the locations of the arguments into the movement associated with their production.[3] Example (11) illustrates 1sg subject and 2sg object pronouns incorporated into a directional verb:

(11) PASADO APENAS 1sg-DECIR-2sg AYER
before just-finish I-tell-you yesterday
*'What did I tell you yesterday?'*

*2.1.3 Classifiers*

Classifiers, formed by handshapes representing specific classes of nouns, are a unique type of pronoun in MSL. Cross-linguistically, they are a typical feature of sign languages, and they constitute one of the primary markers of native signer discourse. Many of the MSL classifiers are identical with those of ASL, or nearly so. In the data collected for this study, three types of classifiers have been noted: persons, objects and shapes, and moving vehicles. When referring to persons and objects, classifiers always occur after the referent has been specified. Further data must be collected to verify whether the noun must precede the introduction of the classifier when referring to moving vehicles.

Classifiers may be inflected in a number of ways, as the classifier representing a human in a seated position (CL:seated) in example (12) illustrates.

(12) move from lt move from rt eye gz rt
CL:seated-lt CL:seated-rt CONDUCIR OTRO TIENDA
climb in the car climb in the car drive other store
*'So they both got in the car, and we drove to another store.'*

Classifiers may change word class from noun to verb, as example (5), repeated below for convenience, illustrates. The noun classifier 'child' is used as a verb meaning 'to grow up', and is simultaneously inflected for the plurality of the subject (see Figure 3):

(13) INDEX-3 INDEX-1 COMPAÑERO INDEX-1 INDEX-3
3sg 1sg friend 1sg 3sg

INDEX-1 MUCHO AMIGO COMPAÑERO
1sg very much friend good friend

2hds-CL:child:rising 2hds-CL:child:rising
2-grow-up-together 2-grow-up-together

ACORDARSE COMPAÑERO
remember friend

*'My friend and I, my very good friend, we grew up together, we were kids together, I remember (that) friend.'*

Interestingly, the classifier CL:child, which behaves as a prototypical sign in its inflections, is, in fact, a relexification of a gesture widely used in hearing society in Mexico to symbolize children: the curved finger placed at various heights is used adjectively to signify the age and size of a child. When used by hearing Mexicans, however, the gesture cannot be inflected as a verb, nor can it be marked for number, as it is here in its relexified form in MSL.

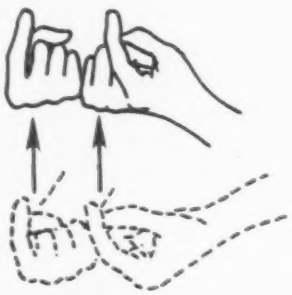

**Figure 3: Classifier 'child' used as a verb 'to grow up'**

A list of classifiers recorded is found in Appendix II.

*2.1.4 Initialized*

The fourth category of pronouns, initialized pronouns, originates in the written form of Spanish and is thus the category which exhibits the highest degree of influence from Spanish, both morphologically and syntactically. The initialized pronouns recorded in our data are the following:

**Table 1: Initialized pronouns**

| Sign gloss | Spanish gloss | English gloss |
|---|---|---|
| e | ME | 'me' |
| i | MI | 'me, my' |
| n | NUESTRO, NOSOTROS | 'we, our' |
| u | USTEDES | 'you (pl.)' |
| y | YO | 'I' |

Examples of usage for each of these pronouns follows. According to both Karla Faurot (personal communication) and Guzmán and Miranda 1987, "u" to represent Spanish USTED '2sg-formal' is also used, but our data sample does not contain any examples of this, undoubtedly due to the informal register in which the data was obtained. Example (14) illustrates "e" as a direct object and (15) illustrates "e" as a reflexive, following Spanish syntax in both cases:

(14) e COGER MARILYN
me take Marilyn
*'Marilyn picked me up.'*[4]

(15) NO e ACORDAR
not me remember
*'I don't remember.'*

Example (16) illustrates the use of "i" to express the Spanish 1sg possessive 'MI':

(16) i PAPA ESTAR IN MEXICO
my father is in Mexico
*'My father is in Mexico.'*

[4] In MSL, tense is not commonly marked on the verb. In this case, the past tense is inferred from the previous utterance.

The 1sg object of the preposition 'MI', also expressed as "i", is found in constructions such as those illustrated in (17):

(17) PARA i e GUSTAR
for me to-me pleasing
*'I like it.'*

Example (17) also provides another example of the use of 1sg "e" as the object in Spanish syntax.

In general, it can be said that the use of "i" and "e" in MSL indicate influence from the syntax of the surrounding written language environment. The two signs are executed as a kind of contraction of the fingerspelled Spanish words MI 'me, my' and ME 'me' on the chest (the usual location for deictic representation of the first person). In our data, no examples of 2sg or 3sg initialized pronouns were obtained. Due to the formation of the first person pronoun on a base which supports the meaning (the signer's chest), and given the physical impracticality of similarly forming the second and third person signs, such signs would be highly improbable. More likely is that an indexical pronoun would be used if the signer wanted to overtly express the second or third person. Eatough (1992:23) claims categorically that 'there are no initialized third person pronouns', but states that fingerspelled TU 'you, your', oriented toward the addressee, is a possibility, albeit rarely used.

Examples of initialized "n" NUESTRO 'our', NOSOTROS 'we', as well as initialized "u" USTEDES 'you pl' and "y" YO 'I' were also recorded.

*2.1.5 Possessive pronouns*

Possessive pronouns have been recorded for 1sg, 2sg, and 3sg. Plural possessives have not been observed. The possessive pronoun is formed with a p-handshape, then signed in the appropriate location to indicate the possessor, i.e. tapping on the signer's chest for MI 'my' or MIO 'mine', shaking in the extended signing space between two interlocutors for TU 'your' or TUYO 'yours' (see Figure 4), and shaking off-center in the extended signing space for SU and SUYO 'his, her, hers'. Examples (18)–(20) illustrate the use of the possessive pronouns in the singular:

**Figure 4: POSS-2**

(18) TODO ES POSS-1
all is 1sg.POSS
*'All that is mine.'*

(19) DONDE ESTAR POSS-2 LLAVE
where to-be-located 2sg.POSS key
*'Where are your keys?'*

(20) POSS-3 ESPOSO IRSE JUNTOS HOMBRE IRSE AYUDAR ALLÁ
3sg.POSS husband go together man go help-over-there
*'Her husband had gone out to help another man.'*

*2.2 Non-manual Pronouns*

In this section I will discuss pronominalization by means of eye gaze and body shift.

*2.2.1 Eye gaze*

The term eye gaze refers to a location assigned by means of a movement of the eyes to a pronominal referent after that person has been referred to in the narrative by an indexical pronoun. Eye gaze alone cannot establish the referent's location; it must either accompany the introduction of a nominal or indexical referent, or be preceded in the discourse by an indexical indication of the referent's location. Subsequent references to that location by means of eye gazes or manual references (such as indexical or incorporated pronouns on directional verbs) suppose the interlocutor's understanding that that location is reserved specifically for that referent.

For example, in (20), the first occurrence of the lexical item 'man' is accompanied by an eye gaze to the right, signified by the indication 'eye gz rt' on the line reserved for non-manual markers above the gloss line. This eye gaze, in conjunction with the lexical item 'HOMBRE', serves to assign that location to the designated 'man' in the subsequent discourse.

Example (6), repeated below for convenience, illustrates the use of eye gaze simultaneously accompanying an indexical reference: [5]

(21)
```
          eye gz rt
DEPENDER INDEX-3-arc PERSONA GUSTAR
depends  3pl        person  like/please
```
*'It depends on what people like.'*

In (22) mention is made of the nominal referent (the hearing aid), then its location is established by means of an eye gaze focused on the classifier (CL: small square thing), followed by eye gazes in subsequent references to indicate the hearing aids.

(22)
```
i  HIJO  TENER APARATO      // SER
my child have  hearing aid // be

MAS  IMPORTANTE PORQUE  SER DELICADO
more important  because be  delicate

eye gz at CL:          eye gz down   eye gz down
CL:small square thing  MAS DELICADO  CAER
it                     more fragile  fall

                  eye gz interloc.  eyebrow up
ROMPEAR ROMPEAR   MAS DELICADO      //
break   break     it more fragile   //

           eye gz down
IMPORTANTE CUIDAR           MUCHO
important  take care of it  much
```

[5] The abbreviations above the data line (rt shd, gz rt, bs rt) refer to the non-manual features. An explanation of the abbreviations is found in the Abbreviations section of this paper.

eye gz interloc.; eye gz down
CUIDAR
take care of it

*'My children have hearing aids, and it is very important because they are very fragile, very fragile—they could fall and break; they are so fragile—it's important to be careful, very careful, with them.'*

*2.2.2 Body Shift*

Body shift is a commonly-used device in which the narrator assumes the person of another character in the narrative. Example (23), fully glossed with all of the non-manual markers, illustrates both the effective use of body shift pronominals and the richness and complexity of the non-manual features. The signer sets up the location of the teacher and the director, and then clearly conveys the message emanating from each by maintaining these locations.

(23)

| | | blnk, gz rt | | |
|---|---|---|---|---|
| | gz rt | mouth grimace | | blnk, gz rt |
| eyes up | mouth open | tight lower lip | | blnk, gz inloc |
| CERCA | M-A-Y-O | SENTIR | ACERCAR | PROFESSOR |
| around | May | feel | go-to | teacher |

| gz rt, blnk | | lean rt | | |
|---|---|---|---|---|
| DIRECTOR | PUES | PRUEBA | SI | PERMISO |
| director | for | see | if | permission |

| gz rt | sharp bs rt | hold bs, but |
|---|---|---|
| head tilt rt | lips taut | turn head lt |
| | SI (rt hand) | SI (lt hand) |
| there-at-school | yes | yes |

*'Around May, I thought [it was about time] to go see the teacher and director to ask for permission [for the children to be absent from school], and they both said yes.'*

When translated into English, body shift pronominalization is rendered by indirect discourse, e.g. 'They both said yes'. This contrasts with the MSL discourse in that the narrator makes two body shifts and thereby clearly assumes the roles of each of the characters, signalling that "Director says 'yes'; teacher says 'yes'".

*3.5 Deletion of Pronouns*

Deletion of pronouns (pro-drop) is quite frequent in MSL. It has been observed to occur not only in the imperative, a common cross-linguistic phenomenon, but also when the pronominal subject has been previously established. The subject of a sentence is understood to be the speaker unless otherwise specified, as example (23) 'CERCA M-A-Y-O SENTIR...' illustrates. Similar examples are found frequently in our recordings. Deletion of a third person pronoun is illustrated in the second sentence of example (24), occurring, as predicted, after the subject had been established in the first sentence.

(24) J QUERER GANAR UNA BOLSA PARA ESCUELA //
Josué want get a backpack for school //

BOLSA QUERER COMPRAR
backpack want buy

*'Josué wanted to get a backpack for school. He wanted to buy a backpack.'*

Cases of pro-drop without syntactic or morphological marking are not to be confused with incorporated subjects of directional verbs, where the verb morphology provides an explicit statement of subject and object.

Given that pro-drop is also a common phenomenon in ASL, it would be interesting to undertake a comparison of pro-drop phenomena across a variety of both spoken and signed languages to see what universal patterns are discernible.

## 4. Conclusion

This study has attempted to inventory the various types of pronouns used in Mexican Sign Language, separating them into two major classes: manual pronouns (including indexical, incorporated, classifiers, initialized, and possessives) and non-manual pronouns (eye gaze and body shift). Since pronoun deletion was also found to be a common phenomenon in MSL, utterances illustrating this were also discussed.

MSL pronouns constitute a relatively closed class of items yet give evidence of change due to frequent contact with spoken and written Spanish. They provide an excellent set of data with which to illustrate many of the characteristic features of Mexican Sign Language: iconicity of signs, physical constraints on sign formation, the prominent use of classifiers, the grammatical and semantic importance of body shifts and eye movements, and finally, syntactic variability and relexification due to language contact.

Having highlighted these features by means of this study of pronouns, it is hoped that the groundwork has been laid for subsequent investigation into these same features in other aspects of the language.

## Appendix I: Glossing Conventions

In cases where a gloss might be ambiguous in its representation of a sign, the following conventions were adopted for purposes of this paper:

| | | |
|---|---|---|
| IR-SE | go-1 | two palms grazing |
| IR-v | go-2 | thumb and index indicating disappearance into the horizon |
| IR-VV | go-3 | two-handed V-shape rotating away from speaker |
| INDEX-1 | | using index finger pointing to self |
| INDEX-1b | | using two or more fingers to point to self |

## Appendix II: Attested MSL Manual Pronouns from Data Sample Used for This Study

1. Indexical pronouns

| | |
|---|---|
| INDEX-1 | '1sg' |
| INDEX-1b | '1sg' |
| INDEX-2 | '2sg' |
| INDEX-3dl | '3dl' |
| INDEX-3sg | '3sg' |
| INDEX-3dl | '3dl' |
| INDEX-3-arc | '3pl' |
| INDEX-3-many | '3pl' |

2. Incorporated pronouns

Arguments of directional verbs

3. Classifiers

Persons
- 'seated'
- 'sitting-in-a-group'
- 'walking upstairs'
- 'walking downstairs'
- 'sitting face-to-face'
- 'child-grow-up'

Objects/Shapes

| | |
|---|---|
| CL:o | 'small-round-object' |
| CL:B | 'wall, flat surface' |
| CL:index-Y | 'bed' |
| CL:Y | 'pitcher, pouring vessel' |

Vehicles

| | |
|---|---|
| CL:index-Y | 'car' |
| CL:L-Y | 'airplane' |

4. Initialized pronouns

| | | |
|---|---|---|
| e | ME | 'me' |
| i | MI | 'me, my' |
| n | NUESTRO, NOSOTROS | 'we, our' |
| u | USTEDES | 'your, pl.' |
| y | YO | 'I' |

5. Possessive pronouns

| | |
|---|---|
| POSS | possessive pronoun, marked for specific referent by localization, attested for 1sg, 2sg, 3sg |

**Abbreviations**

| | |
|---|---|
| # | performance pause, signaling clause or sentence boundary |
| 1 | first person |
| 2 | second person |
| 3 | third person |
| blnk | blink |
| bs | body shift |
| dl | dual |
| gz | gaze non-manual marker |
| inloc | interlocutor |
| intns | intensifier |
| lt | left |
| loc | location, locative |
| many | an unspecified number of plural |
| neg | negative head shake non-manual marker |
| pl | plural |
| poss | possessive |
| pn | pronoun |
| q | question non-manual marker |
| rt | right |

sg singular
sh shoulder, i.e. sign executed off the shoulder, as opposed to being executed in neutral signing space

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# Madija Predicates

Pamela S. Wright[1]

*This article examines several previously-unexplained aspects of verbal morphology and syntax in Madija, an Arauan language spoken in Peru and Brazil. These include the distribution of an auxiliary verb which occurs with some predicates but not with others, the factors determining the choice among three different affixes marking third person agreement, and three different affixes indicating a plural subject.*

*Using the framework of Relational Grammar, a unified analysis of Madija predicate classes and verbal morphology can be given. This provides further evidence for such proposals as the Unaccusative Hypothesis, Postal's proposed analysis for antipassive, the analysis of impersonal constructions as containing a dummy nominal, and the analysis of causatives as multipredicate clauses (along the lines of proposals by Davies and Rosen).*

## 1. Introduction

There are several problems surrounding the class of predicates in Madija that have not been explained in any published material. First, there is an auxiliary verb which is used at some times but not at others. Second, three distinct morphemes for third person agreement occur on the verb. Third, agreement with a plural subject is signaled by two different morphemes. Finally, gender agreement, which has been discussed by Adams and Marlett (1987), is sometimes determined by the subject and sometimes by the direct object of a transitive verb. Using Relational Grammar, this article will explain the problems listed above while providing rules on how the morphemes are used. To do this, predicates will be looked at in their subclasses of intransitive and transitive verbs, and adjectives used as predicates. Most of the data used in this article were taken from texts collected by Patsy Adams during her 35 years' working with the Madija people under the Summer Institute of Linguistics in Peru. There was no native speaker available to confirm that the text material was correct.

### *1.1 Typology*

Madija, a member of the Arauan language group, is the mother tongue language of about 3000 speakers in Brazil and Peru. It is an agglutinating language with around twenty positions where an affix can occur. Four of these are prefixes and sixteen are suffixes (Adams and Marlett, ms.). The affixes that are important to the arguments in this article are those that show person and number

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[1] Editor's note: This article is a slightly edited version of the author's 1988 M.A. thesis at the University of North Dakota.

To thank the many people who have helped me with encouragement, advice, and support during the writing of this thesis would be impossible. I would like to give special thanks, however, to Patsy Adams for sharing her years of hard work with me, to Steve Marlett for his many readings of the original thesis and his valuable corrections and advice, and a very special thanks to the Madija people and their beautiful language.

Abbreviations: 1 - first person, 2 - second person, 3 - third person, Adv - Adverbial, Aux - auxiliary verb, Caus - causative, Comp - completive, Cop - copulative auxiliary, Decl - declarative, D - dual, F - feminine, Fut - future, Gen - genitive, Imp - imperfective, Inc - incompletive, Juss - jussive, Loc - locative, M - masculine, Neg - negative, Pl - plural, Q - question marker, S - singular.

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agreement and the aspect morpheme which, among others, reflects the gender of the clause. The causative morpheme plays a minor role as well. The positions of these morphemes are shown below.

(1) 3 2 1 7,8 16
person-number-causative-ROOT...-number...-aspect

A predicate does not normally have every position filled. In this article sentences were chosen with only the relevant affixes on the predicate whenever possible.

Word order in basic clauses is SOV: subject, object, verb. The following examples show a basic clause with its order of constituents:

(2) a. S O V Aux
Pablo kodzo ts$^{h}$ite i-na-bak$^{h}$i-hari.
Pablo lizard shoot 3-Aux-Pl.O-Comp.M
*Pablo shot lizards.*

b. S O V Aux
Dzodze dzami dzoho i-na-haro.
Jose axe carry 3-Aux-Comp.F
*Jose carried the axe.*

However, when both the subject and the object are animate, the order is sometimes OSV.

(3) O S V Aux
Mokira dzomahi dama i-na-hari.
opossum jaguar grab 3-Aux-Comp.M
*The jaguar grabbed the opossum.*

There is no case marking in Madija. A subject and direct object receive no special inflection but an indirect object is followed by the postposition *dza*. This fits the universal given by Greenberg (1966) that SOV languages are postpositional. This morpheme is also used for a number of obliques like location, goal, source, instrument, and benefactive. In this article *dza* will be glossed Loc to be consistent with other published work in Madija. The orthography is also that used by Adams and Marlett (ms.).

(4) a. Noba dza papeo da o-na-hari.
Noba Loc book give 1-Aux-Comp.M
*I gave the book to Noba.*

b. Etero Oaido dza mitha o-na-haro.
cloth Oaido Loc buy 1-Aux-Comp.F
*I buy cloth for/from Oaido.*

c. Oano dzami dza aoa ka i-na-hari.
Oano axe Loc tree cut 3-Aux-Comp.M
*Oano cut the tree with an axe.*

d. Oa pi Sena Madureira dza meme o-k$^{h}$a Rio Branco dza.
I * Sena Madureira Loc sky 1-go Rio Branco Loc
*I fly from Sena Madureira to Rio Branco.*

Madija further follows Greenberg's universals for an SOV language in that genitives precede the noun and question particles come clause final.

(5) a. O-k$^{h}$a abi Ø-dzok$^{h}$e-hari.
1-Gen father 3-die-Comp.M
*My father died.*

b. Oano to-k$^{h}$a ko?
Oano 3-go Q
*Did Oano go?*

Greenberg also states that if an SOV language has an inflected auxiliary it will follow the main verb. Madija has such an auxiliary. Examples of this can be seen in (2), (3), and (4). In Madija the verb, or the auxiliary verb, if present, always agrees with the subject in person. This is true for all classes of predicates. Pronouns are frequently omitted if they are not under emphasis.

(6) *Intransitive verbs*

*Emphasis or clarification*[2]

a. Tia pi Bino ti-da-haro.
you * Bino 2-hit-Comp.F
You *hit Bino.*

b. Oa tia o-da-haro.
I you 1-hit-Comp.F
I *hit you.*

*No emphasis or clarification*

c. Haha *o*-na-haro.
laugh 1-Aux-Comp.F
*I laughed.*

d. Haha *ti*-na-haro.
laugh 2-Aux-Comp.F
*You laughed.*

e. Haha Ø-na-haro.
laugh 3-Aux-Comp.F
*She laughed.*

f. Haha Ø-na-hari.
laugh 3-Aux-Comp.M
*He laughed.*

g. *O*-ts$^{h}$ona-haro.
1-fall-Comp.F
*I fell.*

h. *Ti*-ts$^{h}$ona-haro.
2-fall-Comp.F
*You fell.*

i. Ø-ts$^{h}$ona-haro.
3-fall-Comp.F
*She fell.*

---

[2] The morpheme *pi/pa* has an unknown meaning. The feminine form is *pi,* while the masculine is *pa.*

j. Ø-tsʰona-hari.
3-fall-Comp.M
*He fell.*

*Transitive verbs*

k. Kodzo tsʰite *o*-na-hari.
lizard shoot 1-Aux-Comp.M
*I shot the lizard.*

l. Kodzo tsʰite *ti*-na-hari.
lizard shoot 2-Aux-Comp.M
*You shot the lizard.*

m. Bino pa tia *i*-da-haro.
Bino * you 3-hit-Comp.F
*Bino hit you.*

n. Tia pi Bino *ti*-da-hari.
you * Bino 2-hit-Comp.M
*You hit Bino.*

o. Oa tia *o*-da-haro.
I you 1-hit-Comp.F
*I hit you.*

p. Tia oa *ti*-da-haro.
you I 2-hit-Comp.F
*You hit me.*

Third person agreement with transitive verbs uses three different morphemes. This was one of the problem areas noted at the start of this article. These morphemes, and an analysis of them, will be given in section 3. The fact that the verb agrees with the subject in person can be stated in a rule.

(7) *Verb agreement:* The verb, or auxiliary verb, if present, agrees with the subject in person. What level of subject the verb agrees with will also be handled in section 3.

The verb, or auxiliary verb, if present, also agrees with the subject in number.

(8) *Intransitive verbs*

a. Ohi ti-*ki*-na-haro.
cry 2-Pl-Aux-Comp.F
*You (plural) cried.*

b. Bakʰo Ø-*ki*-na-hari.
arrive 3-Pl-Aux-Comp.M
*They arrived.*

c. Khobo ti-*ki*-na-haro.
crawl 2-Pl-Aux-Comp.F
*You (plural) crawled.*

d. Ti-tsʰona-*mana*-haro.
2-fall-Pl-Comp.F
*You (plural) fell.*

e. Ø-oada-*mana*-haro.
3-sleep-Pl-Comp.F
*They slept.*

f. Kodzo tsʰite ti-*ki*-na-hari.
lizard shoot 2-Pl-Aux-Comp.M
*You (plural) shot the lizard.*

g. Kodzo tsʰite i-na-*mana*-hari.
lizard shoot 3-Aux-Pl-Comp.M
*They shot the lizard.*

The selection of morpheme for plural subject agreement is another problem that this article will discuss. Because of its complex nature, this will not be discussed until section 4. Since there is agreement with the subject in number, this needs to be added to the Verb Agreement rule given in (7).

(9) *Verb Agreement:* The verb, or auxiliary verb, if present, agrees with the subject in person and number.

There is also agreement with animate objects in number. This agreement can be with either a direct or indirect object. Example (10g) shows that an inanimate object does not trigger agreement on the verb.

(10) *Agreement with indirect object*

a. Ia dza hoa hoa Ø-na-*bakʰi*-hari.
1 Loc shout shout 3-Aux-Pl-Comp.M
*He shouted to us.*

b. Poa deni dza oaoa o-na-*bakʰi*-haro.
3 Pl Loc call 1-Aux-Pl-Comp.F
*I called to them.*

c. Nadzapa piloto papeo da i-na-*bakʰi*-dza
then pilot paper give 3-Aux-Pl-Adv
*Then after the pilot gave papers to them*

*Agreement with direct object*

d. Kodzo tsʰite i-na-*bakʰi*-*mana*-hari.
lizard shoot 3-Aux-Pl-Pl-Comp.M
*They shot the lizards.*

e. Kodzo tsʰite ti-*ki*-na-*bakʰi*-hari.
lizard shoot 2-Pl-Aux-Pl-Comp.M
*You (plural) shot the lizards.*

f. Kodzo tsʰite i-na-*bakʰi*-hari.
lizard shoot 3-Aux-Pl-Comp.M
*She shot the lizards.*

g. Makʰi pa boba dia dia t-a-cossa-i.
man * arrows wind wind 3-Aux-over-Inc.M
*The man is wrapping arrows.*

Since verbs show agreement with animate objects in number, this must also be added to the verb agreement rule.

(11) *Verb agreement:* The verb, or auxiliary verb, if present, agrees with the subject in person and number and with an animate object in number.

Another important aspect of Madija syntax is gender. Adams and Marlett (1987) studied this and came to the following conclusions: Every noun in Madija is either masculine or feminine. The gender of selected nominals is reflected throughout the clause in various ways. Which nominal determines gender agreement will be fully explored in section 3. One special quirk that Madija has is that first and second persons are always feminine, even when referring to males. When a morpheme has both a feminine and a masculine form it will be glossed in this article with an F or M. Example (12) shows gender agreement on the verb.

(12) a. Haha o-na-*haro*.
laugh 1-Aux-Comp.F
*I laughed.*

b. Haha ti-na-*haro*.
laugh 2-Aux-Comp.F
*You laughed.*

c. Haha Ø-na-*haro*.
laugh 3-Aux-Comp.F
*She laughed.*

d. Haha Ø-na-*hari*.
laugh 3-Aux-Comp.M
*He laughed.*

e. O-ts$^{h}$ona-*haro*.
1-fall-Comp.F
*I fell.*

f. Ti-ts$^{h}$ona-*haro*.
2-fall-Comp.F
*You fell.*

g. Ø-ts$^{h}$ona-*haro*.
3-fall-Comp.F
*She fell.*

h. Ø-ts$^{h}$ona-*hari*.
3-fall-Comp.M
*He fell.*

Adams and Marlett (1987) have stated that the final absolutive of the clause determines the gender. In the clauses in example (12) the subject determines the gender agreement, while in the clauses in example (13) the direct object determines the gender agreement. The noun *kodzo* 'lizard' is masculine, while *aoi* 'tapir' is feminine.

(13) a. Pedro kodzo ts$^{h}$ite i-na-*hari*.
Pedro lizard shoot 3-Aux-Comp.M
*Pedro shot the lizard.*

b. Pedro aoi ts$^{h}$ite i-na-*haro*.
Pedro tapir shoot 3-Aux-Comp.F
*Pedro shot the tapir.*

*1.2 Overview of article*

This article is done in the framework of Relational Grammar, and a familiarity with its terminology and concepts will be assumed. For those desiring more background in the theory, this can be found in Perlmutter and Postal (1983a) and Perlmutter and Rosen (1984). There are four sections in this article. Section 1 contains a brief typology of Madija and defines the problem areas to be discussed. Section 2 looks at intransitive verbs and divides them into two classes. It provides an explanation for the distribution of the auxiliary verb. Section 3 deals with transitive verbs and three distinct constructions in which they occur. Here the problem of which nominal determines gender is explored, and an explanation of the three morphemes used for third person agreement is given. Section 4 is about a group of adjectives that are used as predicates. This section refines some of the rules stated previously and looks at plural subject agreement. A summary of the rules used closes the article.

**2. Intransitive verbs**

This section examines the syntax of intransitive verbs. Intransitive verbs are the only class of verbs that use the morpheme *to-* for third person agreement to indicate motion away from the speaker. When motion away is not implied, third person agreement is *Ø-*. In example (14a-b) the same verb is used in both clauses. With *to-* it means 'go away'; with *Ø-* it means 'come'.

(14) a. *To*-k$^{h}$a-hari.
3-go-Comp.M
*He went.*

b. *Ø*-k$^{h}$a-ni-hari.
3-go-back-Comp.M
*He came back.*

c. Bak$^{h}$o *to*-ki-na-hari.
arrive 3-Pl-Aux-Comp.M
*They arrived there.*

d. Bak$^{h}$i *Ø*-ki-na-hari.
arrive 3-Pl-Aux-Comp.M
*They arrived here.*

Although intransitive verbs act as a class in regards to the morpheme *to-*, there are other factors that make it desirable to subdivide intransitive verbs into two classes. In section 2.1 I argue for there being two classes of intransitive verbs. In section 2.2 I introduce the Unaccusative Hypothesis as posited by Perlmutter (1978). I then argue that the subdivision of intransitive verbs in Madija results from a difference in structure at the initial stratum. This division must be done on the basis of syntax and not semantics. Section 2.3 uses syntactic arguments for each class of intransitive verbs posited in this article. By using the difference in grammatical relations, a rule for the distribution of the auxiliary verb will be given. The interaction of the auxiliary verb with intransitive verbs also supports the idea of clause union as a multipredicate clause, as suggested by Davies and Rosen (1988).

*2.1 Subcategorization*

Intransitive verbs must be divided into two subgroups because of three differences in their syntactic behavior. These are: (1) whether they use the auxiliary verb, (2) which morpheme is selected for plural subject agreement, and (3) whether the intransitive verb can occur in a causative construction with the morpheme *na-*. If intransitive verbs are treated as a single group it is impossible to predict their behavior in regards to the three differences listed above. Yet these

differences are systematic and can be predicted if the intransitive verbs are divided into two classes.

*2.1.1 Auxiliary*

The first difference listed was that of the use or nonuse of the auxiliary verb. Derbyshire (1986) notes the existence of this auxiliary in related languages and how it affects inflection on verbs. When the auxiliary is present it receives the inflection; when it is not present the main verb receives the inflection. In Madija an intransitive verb is consistent in its use of the auxiliary. Some verbs always occur with the auxiliary while the remainder never do.

(15) *With auxiliary*

a. Dzobi Ø-*na*-hari.
dance 3-Aux-Comp.M
*He dances.*

b. Ohi ti-*na*-haro.
cry 2-Aux-Comp.F
*You cried.*

c. Haha Ø-*na*-hari.
laugh 3-Aux-Comp.M
*He laughed.*

d. Hopha Ø-*na*-hari.
run 3-Aux-Comp.M
*He ran.*

*Without auxiliary*

e. O-k$^{h}$a abi Ø-dzok$^{h}$e-hari.
1s-Gen father 3-die-Comp.M
*My father died.*

f. Ø-oada-hari.
3-sleep-Comp.M
*He slept.*

g. Ø-ts$^{h}$ona-hari.
3-fall-Comp.M
*He fell.*

*2.1.2 Plural subject agreement*

The verb in Madija agrees in number with the subject. There are two morphemes used for plural subject agreement, *ki-* and *-mana*. Intransitive verbs use both of these morphemes, yet their distribution is not haphazard. The intransitive verbs that use an auxiliary verb use the morpheme *ki-*. Those verbs which do not use the auxiliary verb use *-mana*.

(16) *With auxiliary*

a. Ohi ti-*ki*-na-haro.
cry 2-Pl-Aux-Comp.F
*You (plural) cried.*

b. Bak$^{h}$o Ø-*ki*-na-hari.
arrive 3-Pl-Aux-Comp.M
*They arrived.*

c. Khobo ti-*ki*-na-haro.
crawl 2-Pl-Aux-Comp.F
*You (plural) crawled.*

*Without auxiliary*

d. Ti-ts$^{h}$ona-*mana*-haro.
2-fall-Pl-Comp.F
*You (plural) fell.*

e. Ø-oada-*mana*-haro.
3-sleep-Pl-Comp.F
*They slept.*

Again, having two classes of intransitive verbs enables a prediction to be made about which plural morpheme to use.

*2.1.3 Causative morpheme* na-

There is a prefix in Madija that carries the meaning 'to cause or make happen'. This morpheme is phonetically the same as the auxiliary verb, but the two morphemes should not be confused. Their location and function in a clause are very different. The auxiliary functions as a separate word. It follows a main verb and receives all the inflection. The causative morpheme functions as a prefix, occurring between the person agreement and the main verb.

(17) a. Ti-*na*-madi-mana-na!
2-Caus-dwell-Pl-Juss
*May you (plural) let him stay.*

b. Nadzapa bani bedi Ø-*na*-hika-ridza-hari.
then insects small.M 3-Caus-end-around-ImpF.M
*Then he killed the small insects around him.*

The morpheme *na-* introduces an agent that causes the action to take place. This means that an intransitive verb can be used in a transitive sentence, as in example (17). Yet this morpheme does not occur on all intransitive verbs. Only those verbs which do not use the auxiliary verb appear with *na-*. Clearly, a division of intransitive verbs into the two groups already mentioned would be beneficial to explain the usage of *na-*. Without this division intransitive verbs would have to be individually marked as to whether or not they can make use of *na-*.

*2.1.4 Summary*

In the sections above, it has been shown that intransitive verbs split into two classes on the basis of three criteria. The first of these is whether the auxiliary verb is used or not used. The second is which morpheme is selected to show plural subject agreement. The third is whether the verb can occur with the causative prefix *na-*. The important factor about this division is that each criterion divides the verbs into identical classes. A verb which uses the auxiliary verb will select the plural subject agreement *ki-*, while one that does not use the auxiliary verb will use *-mana*. Only those verbs which do not use the auxiliary verb appear with the causative *na-*. Dividing these verbs into two subclasses is a much less costly approach than treating all intransitive verbs as one class and marking each verb for its behavior. Under the system suggested here, only the class of a verb must be marked, the other variables being determined by this class.

(18) *Class 1 verbs*

a. occur with auxiliary verb
b. occur with plural subject agreement *ki-*
c. cannot occur with causative morpheme *na-*

*Class 2 verbs*

a. occur without auxiliary verb
b. occur with plural subject agreement *-mana*
c. can occur with causative morpheme *na-*

It has been established that two classes of intransitive verbs are needed in Madija. In the following sections I will discuss how these are not simply arbitrary classes but are based on initial grammatical relations. This will enable a rule to be written for the distribution of the auxiliary verb.

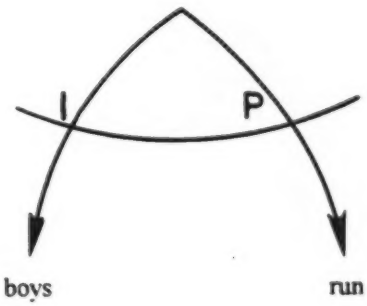
**2.2 Unaccusative Hypothesis**

Perlmutter (1978) has advanced the Unaccusative Hypothesis. This hypothesis makes the claim that there are two kinds of intransitive verbs in every language. These two kinds of intransitive verbs are distinguished by different initial strata. Perlmutter named the two types of verbs unergative and unaccusative. An example of each of these two types in English would be the following two sentences:

(19) a. Boys run.
b. Ice melts.

In sentence (19a) the subject, *boys*, is in control of the action. It is an example of an unergative verb. An unergative verb has the structure usually thought of for an intransitive verb. The verb authorizes an initial 1 but no initial 2.

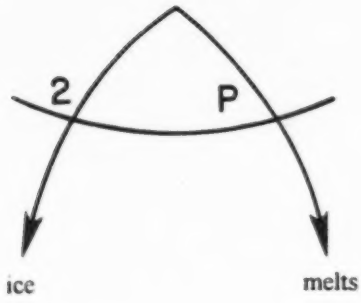
(20)




With unergative verbs the subject is usually in control, often taking the semantic role of agent or actor. The verb is usually volitional.

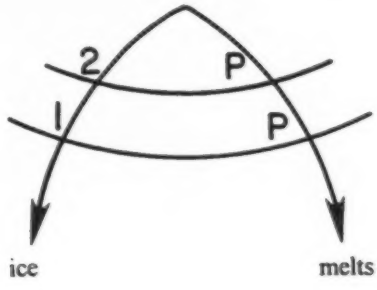
Sentence (19b) is very different. Here the action is happening to the *ice*. *Ice* is the surface subject but it also has the semantic role of patient, which is usually associated with the direct object. Under Perlmutter's proposal, *ice* is a direct object at the initial level. The verb *melt* authorizes a 2, not a 1.

(21)




This type of verb is called an 'unaccusative'. One of the laws posited in RG is that every clause must have a 1 in the final stratum. An unaccusative, as represented in example (21), does not meet this law. Another stratum must be added where the initial 2 advances to a 1. This is called Unaccusative Advancement.

(22)




As can be seen from the diagram above, the nominal is headed by both a 2 and a 1. In the first stratum it is a 2; in the second stratum, a 1. This explains why *ice* has some properties of a direct object, such as patient, and yet is the final subject of the sentence. The subject of an unaccusative verb often has the semantic role of patient. Cross-linguistically, unaccusative verbs tend to describe nonvolitional actions or states.

*2.2.1 Unaccusative hypothesis and Madija verbs*

In Madija a semantic cohesiveness seems to exist within each class of intransitive verbs posited in section 2.1 of this article. A sample listing of these verbs might give a clearer indication of the semantic unity of each group.

(23) *Intransitive verbs which require the auxiliary*

| | |
|---|---|
| bak$^{h}$o | arrive |
| bohe | dive |
| dzobi | dance |
| haha | laugh |
| hikoro | snort |

| | |
|---|---|
| hoa | shout |
| kati | grope |
| k$^{h}$obo | crawl |
| oaha | sway |
| oaoa | call |
| oati | speak |
| ohi | cry |
| thiri | twist around |
| thoho | cough |

*Intransitive verbs which do not use the auxiliary*

| | |
|---|---|
| hika | die, end |
| madi | dwell |
| oada | sleep |
| oatia | die, faint |
| oatidze | be happy |
| ts$^{h}$ona | fall |

The verbs that use the auxiliary tend to be those in which the subject is in control of the action. Those that do not use the auxiliary are nonvolitional; the subject is not in control. This fits the general pattern of unaccusative and unergative verbs.

*2.2.2 Semantics vs. syntax*

Rosen (1984) shows that basing an analysis on semantics leads to incorrect predictions about the class that a verb falls into. The selection of auxiliary verb in Italian does not correlate with semantics. Instead Rosen has shown that the selection of auxiliary verb in Italian is determined by the grammatical relations present in the clause. She states, "Select *essere* 'be' in any clause that contains a 1-arc and an object arc with the same head. Otherwise, select *avere* 'have'." (Rosen 1984:46). Using a rule based on grammatical relations, Rosen is able to explain which auxiliary must be selected.

In Madija, Class 1 verbs fit the general pattern of unergatives by being volitional, while Class 2 verbs are like the unaccusative in that they are nonvolitional. Yet the classes were formed not by semantics but by the syntactic behavior of the verb. Each intransitive verb was evaluated by the three criteria discussed in section 2.1. A Class 1 verb occurs with the auxiliary verb and the plural agreement *ki-* but cannot occur with the causative *na-*. A Class 2 verb does not occur with the auxiliary verb, does occur with *-mana* for plural subject agreement, and does occur with the causative *na-*. An analysis based on semantics would have counterexamples. Madija has three verbs that mean 'to go'. The verb *k$^{h}$a* is used for a singular subject, *kada* for a dual subject, and *hai* for a plural subject. Based on semantics these verbs all fit in the same class, all having the same meaning. Since 'to go' is a volitional action, these verbs should be placed in Class 1 with other volitional verbs. Yet the syntactic behavior of these verbs places them in different classes. These verbs do not use the plural morphemes and there are no cases of them occurring with the causative *na-* in the texts available. If a native speaker were available this could be checked out. The only readily available test is the auxiliary verb. Only one of them uses the auxiliary verb and is placed in Class 1. The other two do not use the auxiliary verb and belong in Class 2.

(24) *Class 1*

a. Hai ti-na-haro.
go.Pl 2-Aux-Comp.F
*You (plural) went.*

*Class 2*

b. Ti-k$^{h}$a-haro.
2-go.S-Comp.F
*You (singular) went.*

c. Ti-kada-haro.
2-go.D-Comp.F
*You (dual) went.*

Semantics makes wrong predictions about the verbs that mean 'to go' in Madija. Although semantics can give us clues that help in forming a hypothesis, the final analysis must rest on syntactic evidence.

*2.3 Syntactic argumentation*

It has been shown in 2.1 that intransitive verbs in Madija fall into two classes. I would like to argue that these two classes are best distinguished by the concepts unergative and unaccusative. I will argue that the verbs defined as Class 1 in 2.1 are unergative and have an initial 1. I will also argue that Class 2 verbs are unaccusative and have no initial 1.

*2.3.1 Unergative, initial 1*

One of the most striking characteristics of the unergative verbs is in their use of the auxiliary verb. These verbs have an initial 1 but no initial 2. The unaccusative verbs, which do not use the auxiliary verb, have an initial 2 but no initial 1. Two possible hypotheses can be drawn from these facts. Either the auxiliary verb is used when the verb has an initial 1, or the auxiliary verb is used when the verb has no initial 2. To decide between these hypotheses other evidence must be found. A verb with a transitive initial stratum would provide that evidence. If it occurs with the auxiliary verb, it is evidence that the initial 1 is determining the presence of the auxiliary. If it does not occur with the auxiliary verb, it is evidence that the presence of an initial 2 is the important factor. I will make the assumption here that a verb which occurs in a simple, finally transitive clause has an initial transitive stratum. These are the verbs that will be discussed in section 3 as transitive verbs. This does not include derived verbs that are formed with a causative morpheme. Transitive verbs in Madija do take the auxiliary verb as shown in (25).

(25) *Transitive verbs*

a. Dzoho i-*na*-ni-haro.
carry 3-Aux-back-Comp.F
*S/he carried her back.*

b. Pedro ts$^{h}$ite i-*na*-haro de.
Pedro shoot 3-Aux-Comp.F Decl.
*Pedro shot her.*

c. Poni dza bani da o-*na*-hari.
her Loc meat give 1-Aux-Comp.M
*I gave her meat.*

d. Kodzo ts$^{h}$ite ti-ki-*na*-hari.
lizard shoot 2-Pl-Aux-Comp.M
*You (plural) shot the lizard.*

Both transitive and unergative verbs take the auxiliary verb. It is reasonable then to keep the hypothesis that a verb which authorizes a 1 will also use the auxiliary verb. This can be used as

evidence for an initial 1 with unergative verbs and the absence of an initial 1 with unaccusative verbs. The rule can be stated in this way:

(26) *Auxiliary rule:* Use the auxiliary verb when there is an initial 1.

There are a few exceptions to the auxiliary rule given in (26). A small class of transitive verbs that do not take the auxiliary verb does exist. In looking through texts, six such verbs have been found. Three of these are homophonous with a regular transitive verb. For example, *da* without the auxiliary means 'to hit'; with the auxiliary it means 'to give'.

(27) a. Poni dza bani da o-na-hari.
her Loc meat give 1-Aux-Comp.M
*I gave her meat.*

b. Poni o-da-haro.
her 1-hit-Comp.F
*I hit her.*

The transitive verbs which do not take the auxiliary, with their homonyms, are:

(28)

| *without auxiliary* | | *with auxiliary* |
|---|---|---|
| ba | put | insert (Pl) |
| da | hit | give |
| di | pick up | |
| hipa | eat | |
| mit$^{h}$a | hear | buy |
| pike | spin | |

Since there was no native speaker available to check the clauses in which these verbs appeared, it is possible that this class could be either larger or smaller. It is also possible that a homonym form for each of these verbs exists. These verbs are a small class which are exceptions to the general rule but do not affect the overall analysis.

*2.3.2 Unaccusatives, no initial 1*

The absence of the auxiliary verb is not the only evidence available for saying that unaccusative verbs do not have an initial 1. It has already been mentioned that unaccusative verbs can take the causative *na-* while unergative verbs cannot. To explain the significance of this, a brief explanation of clause union is needed. Davies and Rosen (1988:54) define a clause as containing clause union when it meets these two criteria:

(29) a. A Union properly contains the makings of a clause which we will call the inner clause. In general there is strong evidence that the syntactic representation formally assigned to that clause should appear intact as part of the syntactic representation of the Union.

b. While the above could be said of any construction involving sentence embedding, a Union is unique in that it also exhibits a 'flat' structure resembling a single complementless clause.

In other words, by some tests it acts like one clause, but by other tests it acts like two. Cross-linguistically, clause union often happens with a causative morpheme. Consider clauses in Madija that contain the causative *na-*.

(30) a. Ti-na-madi-mana-na!
2-Caus-dwell-Pl-Juss
*May you (plural) let him stay.*

b. Nadzapa bani bedi Ø-na-hika-ridza-hari.
then insects small.M 3-Caus-end-around-ImpF.M
*Then he killed the small insects around him.*

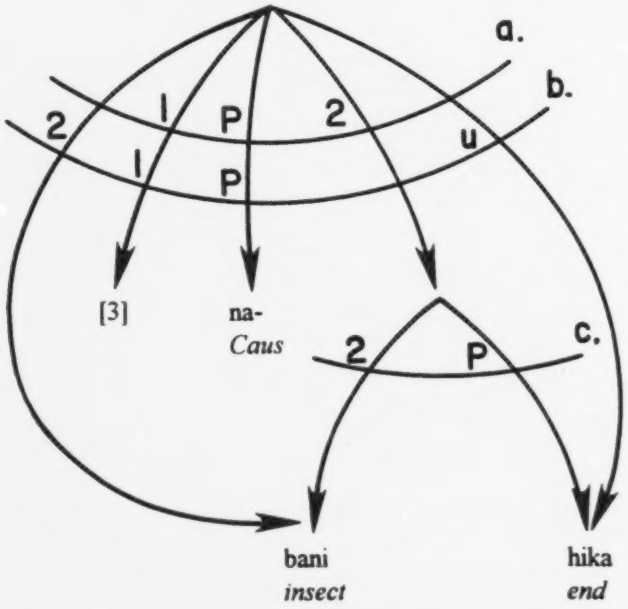
Both of the sentences above have an unaccusative verb to which the causative attaches. This verb is the head of the inner clause. In sentence (30a) the inner clause is formed from the verb *madi* 'to dwell'. An English gloss of the inner clause would be 'he stays'. The verb in (30b) is *hika* 'to end'. This is combined with *bani bedi* 'small insects' to give an inner clause of 'small insects end'. This fulfills the first requirement that the makings of two clauses must be present; however, there is no way to separate the two clauses into subordinate and main clauses. The causative verb attaches directly to the inner verb forming one word. This meets the second requirement that all nominals act as clause mates. It is not a case of simple embedding but a case of clause union.

It has already been stated that the causative *na-* occurs with unaccusative verbs but not with unergative verbs. There are two possible explanations: either this causative can only occur when there is a 2 in the preunion stratum or it can only occur when there is no 1 in the preunion stratum. The preunion stratum is the last stratum of the inner clause before clause union takes place. Since this morpheme does not occur with transitive verbs, which have both a 1 and a 2, the absence of a 1 seems to be the correct hypothesis. A rule can be made stating this.

(31) *Causative na-*: The causative *na-* can be used only when there is no 1 in the preunion stratum.

This rule for the causative *na-* has theoretical implications for how clause union is represented. The standard way of diagramming clause union has been with two clauses. The clause referred to in (29) as the inner clause would be considered a downstairs clause. It is the complement to an upstairs clause with the causative morpheme as its head. The downstairs clause is then raised into the upstairs clause. Sentence (30b) would have a diagram like this:

(32)

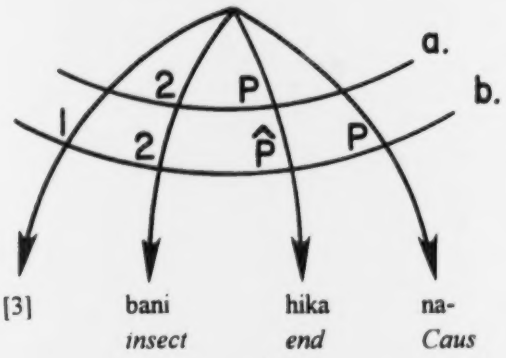



This presents a problem for the Final 1 Law (Perlmutter and Postal 1983b). This law claims that every final stratum must have a 1. The diagram in (32) has two final strata, *b* and *c*. Stratum *b*

contains a 1 but stratum *c* does not. This could be remedied by adding a stratum *d* where Unaccusative Advancement takes place. That would fulfill the Final 1 Law but would violate the rule written in (31) about the use of the causative *na-*. The rule, as presently stated, claims that *na-* can occur only when there is no 1. If there is a final 1 then the causative *na-* cannot be used. If there is no final 1 the Final 1 Law is violated. This same difficulty has been found in Italian (Rosen 1983).

Davies and Rosen (1988) have suggested that clause union is represented better as a multipredicate clause. Although there are two predicates present, there is only one clausal node. The inner clause starts at the initial stratum, and another predicate, with its arguments, is added at the union stratum. Sentence (30b) diagrammed in this way looks quite different from example (32).

(33)




With this analysis there is only one final stratum. The Final 1 Law would apply only to stratum *b*. As this stratum contains a 1, the law is not violated. This allows the Final 1 Law to remain in its present form. Davies and Rosen's analysis also removes a disjunction in the Motivated Chomage Law and makes illegal some clause structures that do not occur naturally but are not ruled out with the biclausal analysis.

The representation of clause union posited by Davies and Rosen is important to Madija for three reasons. The first is that it allows a rule for the causative morpheme *na-* to be stated simply without violating the Final 1 Law. Secondly, the biclausal analysis of clause union, shown in (32), presents a problem for the Auxiliary Rule given in section 2.3.1 and repeated here.

(34) *Auxiliary Rule:* Use the auxiliary verb when there is an initial 1.

In diagram (32) the causative *na-* authorizes a 1 which is the initial 1 of the upstairs clause, as shown in stratum a. That means that the Auxiliary Rule, as presently written, must apply. Since these sentences do not occur with the auxiliary verb, the rule would have to be modified. This would not be easy to do. An ad hoc stipulation would have to be added.

(35) *Auxiliary Rule (revised):* Use the auxiliary verb when there is an initial 1 unless that initial 1 is authorized by a causative morpheme.

With Davies and Rosen's analysis this is not a problem. In example (33) the causative *na-* authorizes a 1, but it enters at the union stratum, NOT at the initial stratum. The auxiliary rule would therefore predict that the sentence should not use the auxiliary verb. Using Davies and Rosen's analysis actually strengthens the auxiliary rule.

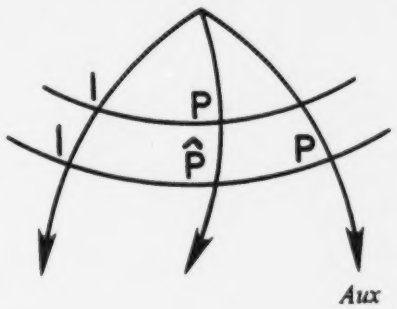
Thirdly, the notion of clause union can also be used to explain why the auxiliary verb receives inflection instead of the main verb. Greenberg (1966:111) makes predictions about verbs and auxiliary verbs. In universals 16 and 13 he states:

(36) a. In languages with a dominant order SOV, an inflected auxiliary always follows the main verb.

b. If the nominal object always precedes the verb, then verb forms subordinate to the main verb also precede it.

At first glance, these two statements appear contradictory; subordinate verbs must precede the main verb, yet inflected auxiliaries must follow it. The conclusion is that inflected auxiliaries are not subordinate but are the main verb. The apparent problem is one of terminology. In (36a) 'main verb' is used in the sense that it has been used in this article. It refers to the verb that describes the action or state. In (36b) 'main verb' could be replaced with final predicate. If the auxiliary verb is a form of clause union then the main verb as used in (36a) has become a chomeur. It is now subordinate to the auxiliary and should precede it. The auxiliary verb, as the final predicate, now receives the inflection. An unergative verb would have a relational network like this:

(37)




This can simplify the Verb Agreement rule last stated in (11). We can simply state that agreement occurs on the final P. It can also be stated that agreement is with the final subject, as an unaccusative verb has no initial subject. The level of the object agreement will be discussed in section 3.

(38) *Verb agreement:* The final predicate agrees with the final subject in person and number and with an animate object in number.

*2.4 Summary*

I have shown that there are two classes of intransitive verbs in Madija. These verbs are distinguished by the presence or absence of the auxiliary verb, their choice of morpheme for plural subject agreement, and their ability to cooccur with the causative morpheme *na-*. The Unaccusative Hypothesis advanced by Perlmutter fits these two classes of intransitive verbs in Madija. Evidence for an initial 1 in unergative verbs is given by the auxiliary verb. That the unaccusative verbs have no initial 1 is shown by the causative *na-*. The absence of a 1 is a necessary condition for this morpheme to occur. The analysis of clause union as presented by Davies and Rosen further supports the rule that the auxiliary verb is used with an initial 1. Although the causative morpheme authorizes a 1, it is not an initial 1, so that the Auxiliary rule does not apply. The idea of clause union can be extended to simplify verb agreement as well.

The rules that were developed in this section of the article are as follows. These rules will be refined throughout this article.

(39) *Auxiliary Rule*: Use the auxiliary verb when there is an initial 1.

*Causative na-*: The causative *na-* can be used only when there is no 1 in the preunion stratum.

*Verb agreement*: The final predicate agrees with the final subject in person and number and with an animate object in number.

**3. Transitive verbs**

The next class of verbs to be discussed is that of transitive verbs. This section will give insight into the morphemes used for third person agreement and support the rule for gender agreement given by Adams and Marlett (1987). Section 3.1 will simply define the syntactic behavior of each construction by looking at the final level. The importance of which level is determining agreement, and the grammatical representation of each construction along with syntactic evidence, will be handled in sections 3.2 through 3.4. During this process the rule for verb agreement will be refined and the rule for gender agreement proposed by Adams and Marlett (1987) will be defended. Also, the different morphemes used for third person will be explained.

*3.1 Syntactic description of constructions*

The transitive verbs in Madija occur in three distinct constructions. These constructions can be distinguished from each other by the choice of third person, gender, and number agreement. Each transitive verb may be found in any of the three constructions.

*3.1.1 Person agreement*

The morphemes used for first and second person remain the same throughout all classes of verbs. There are, however, three morphemes used for third person. The unergative and unaccusative verbs use *Ø-* for third person. Transitive verbs sometimes use this morpheme but they can also use two other morphemes for third person agreement, *i-* and *to-*. This difference in third person agreement is the most visible of the differences between the constructions and is the easiest way to classify them.

(40) *Construction 1*

a. Kodzo tsʰite *i*-na-hari.
lizard shoot 3-Aux-Comp.M
*S/he shot the lizard.*

b. Aoi dzoho *i*-na-haro.
tapir carry 3-Aux-Comp.F
*S/he carried the tapir.*

*Construction 2*

c. Kodzo tsʰite *Ø*-na-hari.
lizard shoot 3-Aux-Comp.M
*He shot the lizard.*

d. Aoi dzoho *Ø*-na-hari.
tapir carry 3-Aux-Comp.M
*He carried the tapir.*

*Construction 3*

e. Oa ts$^{h}$ite *to*-na-haro.
1 shoot 3-Aux-Comp.F
*Someone shot me.* OR *I was shot.*

f. Aoi dzoho *to*-na-haro.
tapir carry 3-Aux-Comp.F
*Someone carried the tapir.* OR *The tapir was carried.*

Construction 1 uses the morpheme *i-* for third person agreement. Construction 2 is like the unergative and unaccusative verbs and uses *Ø-*, while Construction 3 uses *to-*.

*3.1.2 Gender Agreement*

A second difference between the three constructions is with gender agreement. In this section the facts will be presented. The analysis proposed by Adams and Marlett will be discussed in the next section. The noun *kodzo* 'lizard' is masculine (M) while *aoi* 'tapir' is feminine (F).

(41) *Construction 1*

a. Pedro kodzo ts$^{h}$ite i-na-*hari*.
Pedro lizard shoot 3-Aux-Comp.M
*Pedro shot the lizard.*

b. Pedro aoi ts$^{h}$ite i-na-*haro*.
Pedro tapir shoot 3-Aux-Comp.F
*Pedro shot the tapir.*

*Construction 2*

c. Kodzo ts$^{h}$ite Ø-na-*hari*.
lizard shoot 3-Aux-Comp.M
*He shot the lizard.*

d. Aoi ts$^{h}$ite Ø-na-*hari*.
tapir shoot 3-Aux-Comp.M
*He shot the tapir.*

e. Kodzo ts$^{h}$ite Ø-na-*haro*.
lizard shoot 3-Aux-Comp.F
*She shot the lizard.*

*Construction 3*

f. Kodzo ts$^{h}$ite to-na-*hari*.
lizard shoot 3-Aux-Comp.M
*Someone shot the lizard.* OR *The lizard was shot.*

g. Aoi ts$^{h}$ite to-na-*haro*.
tapir shoot 3-Aux-Comp.F
*Someone shot the tapir.* OR *The tapir was shot.*

In Construction 1, shown in examples (41a) and (41b), the subject, *Pedro*, is clearly masculine. Yet when the direct object is feminine, as with *aoi*, the clause bears feminine gender. The direct object is determining gender agreement.

Construction 2, shown in examples (41c) through (41e), is different. In both (41c) and (41d) the clause has masculine agreement, although the direct object in (41d) is feminine. The agreement

here cannot be with the direct object but must be with the subject. Example (41e) shows a clause in this construction with a feminine subject and a masculine direct object. The marking is feminine, agreeing with the subject.

Examples (41f) and (41g) have only one nominal present. The gender of these clauses agrees with this nominal. RG would posit that there is an unspecified subject for these sentences and that the nominal present is the initial direct object. Arguments for considering this a final direct object will be given in section 3.4. For now, it will be assumed that agreement is with the direct object.

In Constructions 1 and 3 the gender is determined by the direct object. In Construction 2 it is determined by the subject. First and second person agreement remains the same, so the only way to determine the construction type for a clause with a first or second person subject is by gender agreement. As stated previously, first and second persons are always feminine.

(42) *Agreement with the direct object*

a. Kodzo tsʰite o-na-*hari*.
lizard shoot 1-Aux-Comp.M
*I shot the lizard.*

b. Aoi tsʰite o-na-*haro*.
tapir shoot 1-Aux-Comp.F
*I shot the tapir.*

c. Kodzo tsʰite ti-na-*hari*.
lizard shoot 2-Aux-Comp.M
*You shot the lizard.*

d. Aoi tsʰite ti-na-*haro*.
tapir shoot 2-Aux-Comp.F
*You shot the tapir.*

*Agreement with the subject*

e. Kodzo tsʰite o-na-*haro*.
lizard shoot 1-Aux-Comp.F
*I shot the lizard.*

f. Aoi tsʰite o-na-*haro*.
tapir shoot 1-Aux-Comp.F
*I shot the tapir.*

g. Kodzo tsʰite ti-na-*haro*.
lizard shoot 2-Aux-Comp.F
*You shot the lizard.*

h. Aoi tsʰite ti-na-*haro*.
tapir shoot 2-Aux-Comp.F
*You shot the tapir.*

Of course when the subject and direct object are the same gender then it is ambiguous which construction type is being used. Compare (42b) with (42f) and (42d) with (42h).

### *3.1.3 Plural agreement*

The third difference between the constructions is in their use of plural agreement. The morpheme used to show agreement with a first person subject has different forms for singular and plural.

(43) a. Ohi o-na-haro.
cry 1.S-Aux-Comp.F
*I cried.*

b. Ohi i-na-haro.
cry 1.P-Aux-Comp.F
*We cried.*

Clauses with a first person subject never show number agreement by using the morphemes *ki-* and *-mana*, which were mentioned in section 2.1.2. This discussion is limited to clauses with a second or third person subject. Each construction uses *ki-* and *-mana* in a different way, as can be seen in example (44).

(44) *Construction 1*

a. Kodzo tsʰite ti-*ki*-na-hari.
lizard shoot 2-Pl-Aux-Comp.M
*You (plural) shot the lizard.*

b. Kodzo tsʰite i-na-*mana*-hari.
lizard shoot 3-Aux-Pl-Comp.M
*They shot the lizard.*

*Construction 2*

c. Kodzo tsʰite ti-*ki*-na-haro.
lizard shoot 2-Pl-Aux-Comp.F
*You (plural) shot the lizard.*

d. Kodzo tsʰite Ø-*ki*-na-hari.
lizard shoot 3-Pl-Aux-Comp.M
*They shot the lizard.*

Construction 1 uses *ki-* with a second person subject and *-mana* for a third person subject. Construction 2 is more regular, using *ki-* for both. Construction 3 rarely occurs with plural subject agreement at all. Only one example could be found. In this case it uses the plural *ki-*.

(45) *Construction 3*

Naraa ima-siri oati to-*ki*-na-haro, amonehe.
but story-lame speak 3-Pl-Aux-Comp.F woman
*But gossip was spoken by the women.*

Plural subject agreement is fairly consistent for transitive verbs. The morpheme *ki-* is used in every place except with a third person subject in Construction 1. Plural subject agreement will be fully explained in section 4.2.

The morpheme *-bakʰi* is used with plural, animate direct or indirect objects. This morpheme can cooccur with either of the morphemes used for plural subject agreement. In this section we will look at agreement with a direct object.

(46) *Construction 1*

a. Kodzo tsʰite i-na-*bakʰi-mana*-hari.
lizard shoot 3-Aux-Pl-Pl-Comp.M
*They shot the lizards.*

b. Kodzo tsʰite ti-*ki*-na-*bakʰi*-hari.
lizard shoot 2-Pl-Aux-Pl-Comp.M
*You (plural) shot the lizards.*

c. Kodzo tsʰite i-na-*bakʰi*-hari.
lizard shoot 3-Aux-Pl-Comp.M
*S/he shot the lizards.*

*Construction 3*

d. Kodzo tsʰite to-na-*bakʰi*-hari.
lizard shoot 3-Aux-Pl-Comp.M
*Someone shot the lizards.* OR *Lizards were shot.*

Sentence (46a) shows *-bakʰi* with the morpheme *-mana* and sentence (46b) shows it with *ki-*. Both of these possibilities are fairly common. In (46c) *-bakʰi* is the only plural morpheme. These are all in Construction 1. The use of *-bakʰi* in Construction 3 is shown in (46d). The construction that is missing from these examples is Construction 2. This construction does not appear to use *-bakʰi* at all for agreement with a direct object.

Another morpheme, *ta-*, is used with plural direct objects when the action is distributive in nature. This morpheme is not used often and I have found it on only eight different verbs. It can cooccur with *-mana* but has not been found with either *ki-* or *-bakʰi*. One unexplained quirk of the morpheme *ta-* is that when it is used, a verb which normally uses the auxiliary will not use it. Construction 1 is the only one to use this morpheme.

(47) *Construction 1*

a. Oaha o-*ta*-tsʰite-hari.
parrot 1-Pl-shoot-Comp.M
*I shot the parrots (one by one).'*

b. Tamaco-na oaha i-*ta*-tsʰite-*mana*-hari.
Tamaco parrot 3-Pl-shoot-Pl-Comp.M
*Tamaco and they shot the parrots.*

The choice of morpheme to show plural direct object agreement differs among the three constructions. Construction 1 uses both *-bakʰi* and *ta-*. Construction 2 uses neither of these morphemes, while Construction 3 uses only *-bakʰi*. It is possible that other combinations of plurals that do not occur in texts could be elicited from a native speaker. I would expect to find that *ta-* car. also occur in Construction 3.

*3.1.4 Summary*

There are three distinct constructions using transitive verbs. They differ in the third person, gender, and plural agreement. These differences are summarized here in chart form for easy reference. Unergative and unaccusative verbs have been added for comparison.

(48)

| construction | 1 | 2 | 3 | unerg. | unacc. |
|---|---|---|---|---|---|
| 3 person | i- | Ø- | to- | Ø- | Ø- |
| gender | direct | subject<br>object | direct | subject<br>object | subject |
| plural<br>subject<br>3 person<br>2 person | -mana<br>ki- | ki-<br>ki- | ki- | ki-<br>ki- | -mana<br>-mana |
| plural<br>direct<br>object | -bak$^h$i<br>ta- | | -bak$^h$i | | |

This section has given an overview of the differences among the three constructions used with transitive verbs. Constructions 1 and 3 are the most similar, both of them having gender determined by the direct object and using *-bak$^h$i* for agreement with a direct object. All of the transitive verbs use *ki-* for plural subject agreement, except for Construction 1 with a third person subject.

The following sections will look at a grammatical analysis for each construction using transitive verbs. Section 3.2 will deal with Construction 1 and begin defining the difference between the morphemes used for third person agreement. Construction 2 will be handled in section 3.3 and the rule proposed by Adams and Marlett (1987) for determining gender will be defended. In section 3.4 third person agreement will be refined and Construction 3 discussed.

*3.2 Construction 1*

There are two major differences between Construction 1 clauses and clauses with unergative or unaccusative verbs. First, the third person agreement used with intransitive verbs is *Ø-*, while in transitive Construction 1 it is *i-*. Second, with intransitive verbs gender agreement is determined by the subject, while in transitive Construction 1 it is determined by the direct object. Since intransitive verbs behave one way and the transitive verbs in Construction 1 another, it is possible to say that this difference is determined by the transitivity of the clause. This transitivity could be either initial or final, but I show below that it is final.

*3.2.1 Ergative*

The concepts of ergative and absolutive are not primitives of RG but are used in the theory, since they are relevant to the grammars of many languages. They are defined informally in this way (Harris 1984):

(49) *ergative:* the subject of a transitive stratum

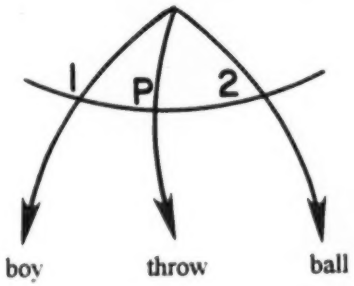
*absolutive:* the subject of an intransitive stratum OR the direct object of any stratum

It is important to realize that this definition applies to the grammatical relations within a specific stratum, not to the clause as a whole. Since it is the definition of relations within a stratum it can be applied to any stratum. As an illustration, look at two English sentences. The first sentence has a final transitive stratum while the second one has a final intransitive stratum.

(50) a. The boy throws the ball.
b. The dog runs.

In the two sentences above, *boy* is, by definition, an ergative in the final stratum since it is the 1 of a transitive stratum. Both *ball* and *dog* are absolutives of their final strata. *Ball* is the 2 of a transitive stratum while *dog* is the 1 of an intransitive stratum. In this article the term ergative will be used in a restricted sense to refer to a final ergative. A clause with an ergative in the final stratum will be called an ergative clause. The stratal diagram of an ergative clause is that of a simple transitive clause, as shown below.

(51)




This concept of ergative and absolutive can be profitably used in Madija grammar. Although every language has ergatives and absolutives by definition, not every language distinguishes the two. English is an example where a final ergative subject is marked no differently than a final absolutive subject. Many languages, however, do make a distinction between the two. A language is often called an ergative language if it "align(s) intransitive subjects and transitive objects in contrast with transitive subjects for the purpose of case marking and other grammatical phenomena" (Davies 1984:332). Languages that are commonly referred to as ergative languages include Georgian, Inupiaq, Kabardian, Kala Lagaw Langgus, and Udi (Harris 1984). Madija should also be considered an ergative language by this definition because of third person agreement morphology and gender agreement, as shown below. If Construction 1 is accepted as a finally transitive clause, here referred to as an ergative clause, then third person agreement and gender are easily explained.

*3.2.2 Syntactic arguments*

One evidence that Construction 1 clauses are finally transitive is the occurrence of plural agreement with the direct object. In section 1.1 it was stated that *-bak$^h$i* shows agreement with a plural direct or indirect object. The morpheme *ta-* is used with a plural direct object when the action is distributive. This can be captured in a rule.

(52) *Number agreement:*
use *ta-* for plural, distributive 2;
use *-bak$^h$i* for plural animate objects

Only one morpheme showing number agreement with an object can occur in a clause.

The term 'objects' is used in RG to refer to both direct and indirect objects. The rule for number agreement must specify that only one morpheme showing agreement with a plural object can occur in a clause. This is because *-bak$^h$i* and *ta-* never occur in the same clause; and although *-bak$^h$i* can agree with either a direct or an indirect animate object, it never occurs twice in a clause.

Construction 1 uses both *-bak$^h$i* and *ta-* to show agreement. Since *-bak$^h$i* shows agreement with either a direct or an indirect animate object, it can occur on intransitive verbs. The plural agreement *ta-*, however, shows agreement only with a direct object and occurs only in

Construction 1. Since a finally intransitive clause has no direct object, *ta-* cannot occur there. The clauses that contain *ta-* are finally transitive.

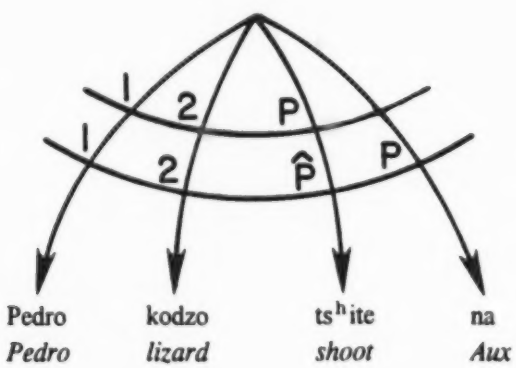
(53) a. Oaha o-*ta*-ts$^{h}$ite-hari.
parrot 1-Pl-shoot-Comp.M
*I shot the parrots (one by one).*

b. Tamaco-na oaha i-*ta*-ts$^{h}$ite-*mana*-hari.
parrot 3-Pl-shoot-Pl-Comp.M
*Tamaco and they shot the parrots.*

Accepting Construction 1 as an ergative clause fits the rule given by Adams and Marlett (1987:4) for determining gender. They state "gender agreement in the clause is determined by the final absolutive." This means that in a clause with a final transitive stratum the gender will be determined by the final direct object. In a clause with a final intransitive stratum the gender will be determined by the final subject. Looking at chart (48), it can be seen that in Construction 1, gender is determined by the direct object. This is evidence that Construction 1 clauses are finally transitive, or ergative clauses (as defined in this article). Only by accepting clauses in Construction 1 as being ergative clauses can gender be explained in this simple way.

The second reason that Construction 1 clauses should be considered ergative clauses is because of third person agreement. In Madija, agreement with a third person subject has three forms. The morpheme *i-* is used only with transitive verbs in Construction 1. It is never used with intransitive clauses. Since languages can mark an ergative subject differently than an absolutive one, this is a reasonable hypothesis for Madija. The morpheme *i-* is used if the subject is a final ergative. The morpheme *Ø-* is used if the subject is a final absolutive. Accepting Construction 1 as an ergative clause enables a simple explanation for third person agreement. The structure for this construction looks like this:

(54)




*3.2.3 Summary*

By considering clauses in Construction 1 to be ergative clauses, two of the problem areas with Madija predicates are simplified. These are third person agreement and gender agreement. The morpheme *i-* shows agreement with a third person ergative subject while *Ø-* shows agreement with a third person absolutive subject. Evidence for this is given by *i-* being used only with finally transitive clauses. When the clauses in Construction 1 are considered ergative clauses, gender agreement can be explained with the notion of absolutive, as suggested by Adams and Marlett (1987). The plural object agreement *ta-* gives another reason for considering these clauses finally transitive. It occurs only with Construction 1 and agrees with the direct object. Plural subject

agreement is not yet fully explained. It will be handled in section 4. The rules used in this section are listed here. Several of them will be modified later.

(55) *Gender agreement* (from Adams and Marlett 1987):
Gender agreement in the clause is determined by the final absolutive.

*Number agreement:*
Use *ta-* for plural, distributive 2;
Use *-bakʰi* for plural animate objects.
Only one morpheme showing number agreement with an object can occur in a clause.

*Person agreement:*
Use *i-* for third person ergative
Use *Ø-* for third person absolutive

*3.3 Construction 2*

Examining Construction 2 will further clarify the morphemes used for third person agreement. Construction 2, although using the same verbs seen in ergative clauses, is very different from these ergative clauses. Transitive verbs in this construction act just like the unergative verbs discussed in section 2. Both unergative verbs and transitive verbs in Construction 2 use *Ø-* for third person agreement.

(56) *Unergative verbs*

a. Haha Ø-na-haro.
laugh 3-Aux-Comp.F
*She laughed.*

b. Haha Ø-na-hari.
laugh 3-Aux-Comp.M
*He laughed.*

*Construction 2*

c. Kodzo tsʰite Ø-na-hari.
lizard shoot 3-Aux-Comp.M
*He shot the lizard.*

d. Aoi tsʰite Ø-na-hari.
tapir shoot 3-Aux-Comp.M
*He shot the tapir.*

e. Kodzo tsʰite Ø-na-haro.
lizard shoot 3-Aux-Comp.F
*She shot the lizard.*

Gender in both types of clauses is determined by the subject. This is clearly seen in sentence (56d) where *aoi* 'tapir' is feminine. In addition, both types of clauses use *ki-* for plural subject agreement.

(57) *Unergative*

a. Bakʰo Ø-*ki*-na-hari.
arrive 3-Pl-Aux-Comp.M
*They arrived.*

b. Haha ti-*ki*-na-haro.
laugh 2-Pl-Aux-Comp.F
*You (plural) laughed.*

*Construction 2*

c. Kodzo tsʰite Ø-*ki*-na-hari.
lizard shoot 3-Pl-Aux-Comp.M
*They shot the lizard.*

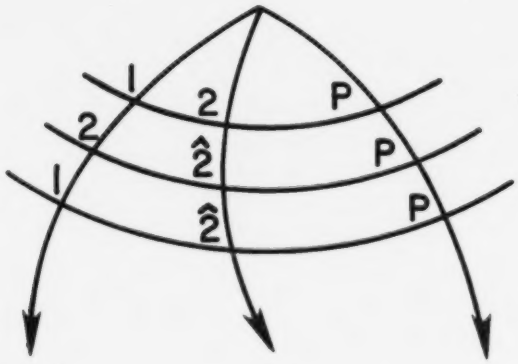
d. Kodzo tsʰite ti-*ki*-na-haro.
lizard shoot 2-Pl-Aux-Comp.F
*You (plural) shot the lizard.*

Since transitive verbs in Construction 2 act just like unergative verbs, and not at all like the ergative clauses discussed in the last section, it is reasonable to consider that they may be finally intransitive clauses. Adams and Marlett (1988) have suggested that these clauses have the internal structure of an antipassive clause. Although the verb is transitive, when it appears in Construction 2 the clause is finally intransitive.

*3.3.1 Antipassive*

In 1977 Postal published a paper on antipassive clauses and proposed the following relational diagram as the universal structure for them.

(58)




With an antipassive, the initial stratum is transitive. Then the initial 1 retreats to a 2, putting the existing 2 en chomage. Since a clause must always have a final subject, the 2 advances to a 1. The result is a transitive verb in an intransitive structure. This structure was not accepted by all linguists, because the second stratum seemed to have no motivation. Evidence for the initial/final 1 being a 2 at some stratum was found in Choctaw (Davies 1984). The characterization of antipassive, as shown in example (58), is accepted by RG as part of the universal grammar available to all languages.

*3.3.2 Syntactic arguments*

For Construction 2 to be considered an antipassive it must have no final 2. I will argue that clauses in Construction 2 are finally intransitive on the basis of gender, person agreement, and plural object agreement.

Adams and Marlett (1987) have stated that the gender agreement of a clause is determined by the final absolutive. In a finally transitive clause the direct object is the absolutive. If clauses with a transitive verb in Construction 2 are finally transitive, then the direct object will determine the gender. The noun *bani* 'meat' is masculine, while *papeo* 'paper' is feminine.

(59) a. `Bani mitha Ø-na-hari.`
`meat buy 3-Aux-Comp.M`
*He bought meat.*

b. `Papeo mitha Ø-na-hari.`
`paper buy 3-Aux-Comp.M`
*He bought paper.*

c. `Bani mitha Ø-na-haro.`
`meat buy 3-Aux-Comp.F`
*She bought meat.*

d. `Papeo mitha Ø-na-haro.`
`paper buy 3-Aux-Comp.F`
*She bought paper.*

The gender in these clauses is clearly not being determined by *bani* 'meat' or *papeo* 'paper', which are the initial direct objects. Instead it is being determined by the initial subject. There are two possibilities. One, the rule for gender agreement is inadequate and needs to be modified in some way. Two, although these clauses have an initial transitive stratum, they do not have a final transitive stratum. They are finally intransitive, making the initial subject the final absolutive. Let us assume first of all that these clauses do have a final 2 and that the rule for determining gender should be changed. The notion of absolutive could not then be used to describe gender; instead, a disjunction would need to be written to cover the facts.

(60) Gender agreement of the clause is determined

a. by the final subject of a finally intransitive clause or a finally transitive clause using Ø- for third person agreement,

b. by the final direct object of a finally transitive clause using i- for third person agreement.

This rule, however, causes problems for third person agreement. If clauses using transitive verbs in Construction 2 have a final 2, then they would be, by the definition used in this article, ergative clauses. However, they do not use the third person ergative agreement *i-*. The rule for third person agreement would also need to be rewritten as a disjunction. In the new rule for person agreement there is no way of predicting which third person agreement prefix to use with a finally transitive clause.

(61) *Person agreement:*

a. Use Ø- for third person with finally intransitive clauses or with finally transitive clauses in Construction 2.

b. Use i- for third person with finally transitive clauses in Construction 1.

Carrying this one step further, if these clauses are finally transitive they should show agreement with plural animate direct objects. We would expect *-bak$^{h}$i* to be used frequently in these sentences. Instead, we find that it is not used even in situations where we would expect it to appear.

(62) Dzomahi ia k$^{h}$a Ø-na-i...
jaguar us crack.with.teeth 3-Aux-Inc.M
*A jaguar could have eaten us...*

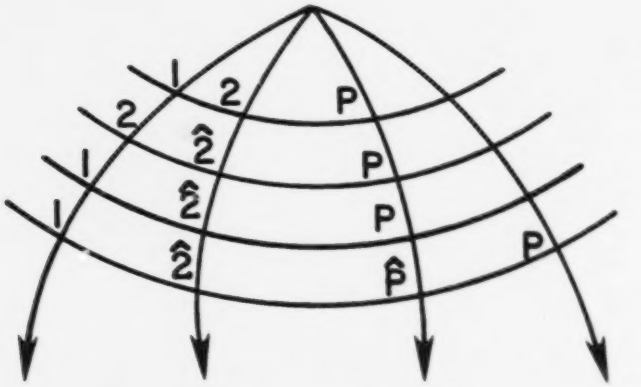
In clause (61) *ia* 'us' is plural. If we assume it is the direct object as well, the absence of *-bak$^{h}$i* on the verb must be explained. This demands that the number agreement rule be changed in regard to *-bak$^{h}$i*. The revision must be more drastic than that, however. If these clauses are finally transitive they should also be able to use the plural distributive morpheme *ta-*. No examples of such a sentence can be found. The entire number agreement rule must be rewritten.

(63) *Number agreement*
a. Use *ta-* for a plural distributive direct object in Construction 1.
b. Use *-bak$^{h}$i* for a plural animate object unless that object is the direct object of a Construction 2 clause.

Assuming that clauses in Construction 2 have a final 2 presents problems for person agreement, gender, and number agreement. The rules that must be written are complicated disjunctions that offer no explanations. A much better analysis is available.

The antipassive analysis would give this diagram to sentence (59c):

(64)




The antipassive analysis claims that these clauses are finally intransitive. This analysis avoids the problems caused by assuming these clauses are finally transitive. The gender agreement rule proposed by Adams and Marlett (1987) can now explain gender in these clauses. Although antipassive clauses have an initial absolutive that is a direct object, it is not this that determines gender agreement. The agreement rule states that the final absolutive decides which gender the clause will be. The final absolutive of an antipassive clause is the final subject. Accepting the antipassive analysis also allows the rules for person and number agreement to be written simply. The verb agreement rule will now specify the final object with respect to number. This explains the absence of *-bak$^{h}$i* in antipassive clauses. Although they have an initial direct object, they have no final one.

(65) *Verb agreement*: The final verb agrees with the final subject in person and number and with the final animate object in number.

There is no need to write a disjunction to exclude *-bak$^h$i* from occurring on these clauses, as they no longer meet the requirements for its use. The rule as presently stated predicts that *-bak$^h$i* will not occur on an antipassive clause. The morpheme *i-* can be specified as agreeing with a final third person ergative while *Ø-* agrees with a final third person absolutive. The antipassive analysis explains the facts and allows a simple grammar to be constructed.

*3.3.3 Summary*

I have given arguments against positing a final 2 in Construction 2. I have shown that assuming a final 2 in these clauses would complicate the grammar and is less explanatory. On the other hand, assuming that these clauses are antipassive and finally intransitive results in a clear, simple, explanatory grammar. The rules used in this last section are summarized here.

(66) *Verb agreement:* The final verb agrees with the final subject in person and number and with the final animate object in number.

*Number agreement:*
Use *ta-* for plural, distributive 2
Use *-bak$^h$i* for plural, animate objects

Only one morpheme showing number agreement with an object can occur in a clause.

*Person agreement:*
Use *i-* for third person ergative
Use *Ø-* for third person absolutive

*Gender agreement:* Gender agreement in the clause is determined by the final absolutive.

*3.4 Construction 3*

Many of the problem areas with Madija predicates mentioned in section 1 have been cleared up in the preceding sections. This section examines the third construction used with transitive verbs and completes the explanation for third person morphemes. Construction 3 has its own form of third person agreement, *to-*.

(67) a. Oa ts$^h$ite *to*-na-haro.
1 shoot 3-Aux-Comp.F
*Someone shot me.* OR *I was shot.*

b. Aoi dzoho *to*-na-haro.
tapir carry 3-Aux-Comp.F
*Someone carried the tapir.* OR *The tapir was carried.*

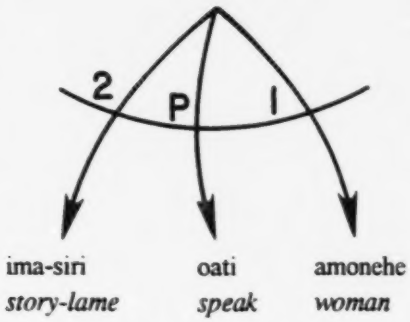
This third person agreement should not be confused with the morpheme *to-* mentioned in section 2, example (14). In Construction 3 there is no semantic notion of motion away. The morpheme *to-* is also used as the third person agreement for an entire class of adjective predicates, discussed in section 4. There does not seem to be any way, with my present understanding of Madija, to combine the uses of the morpheme *to-* under one rule. Instead it seems best to assume that *to-* is three separate morphemes that should not be related in the analysis.

One characteristic of Construction 3 is that the agent is almost always unspecified. This is so widespread that only one example of a clause in Construction 3 has been found where the agent is identified.

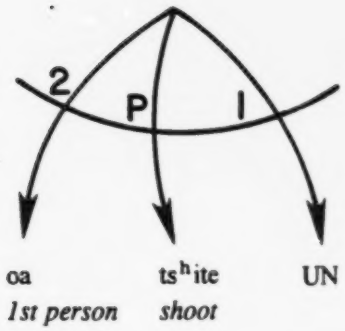
(68) *Construction 3*
Naraa ima-siri oati to-ki-na-haro, amonehe.
but story-lame speak 3-Pl-Aux-Comp.F woman
*But gossip was spoken by the women.*

Although (68) has a nominal that could be considered the subject while those clauses in (67) do not, the initial strata of both are identical. RG would assign the grammatical relation of subject to 'woman' in example (68). The clause in (67a) would have an initial subject arc headed by UN.

(69) a.




b.




UN stands for Unspecified, that is, the initial subject has no phonetic form in the clause and has no specification for gender, person, or number. The clause has no overt subject nominal. The initial stratum shown in (69) is no different from the initial stratum of either the ergative or the antipassive clauses discussed earlier in this article and diagrammed in (54) and (64). The difference in third person agreement must come from some later stratum. There are three possibilities: passive, unspecified subject, or impersonal construction. Each possibility will be discussed in the following sections.

*3.4.1 Passive*

If the clauses in (70) are personal passives, then the overt nominal must be the subject of a finally intransitive clause. This would explain why the gender in these clauses is determined by the overt nominal.

(70) a. Aoi dzoho to-na-haro.
tapir carry 3-Aux-Comp.F
*Someone carried the tapir.* OR *The tapir is carried.*

b. Kodzo dzoho to-na-hari.
lizard carry 3-Aux-Comp.M
*Someone carried the lizard.* OR *The lizard is carried.*

c. Oa tsʰite to-na-haro.
1 shoot 3-Aux-Comp.F
*Someone shot me.* OR *I was shot.*

However the idea that *aoi* 'tapir', *kodzo* 'lizard', and *oa* '1 person' are the final subjects of the clauses in (70) must be rejected for two reasons. First, they do not determine person agreement on the verb as final subjects do. Although *aoi* is third person while *oa* is first person, the agreement on the verb in both cases is *to-*. Second, when this nominal is plural it does not determine plural subject agreement. Instead the morpheme for a plural object appears on the verb. In (71) *kodzo* 'lizard' must be the direct object.

(71) Kodzo tsʰite to-na-*bakʰi*-hari.
lizard shoot 3-Aux-Pl.O-Comp.
*Someone shot the lizards.* OR *Lizards were shot.*

The passive analysis must be rejected for Construction 3. The initial direct object cannot be the final subject because it does not determine person agreement or plural subject agreement on the verb. There are two other hypotheses to be explored: that of an unspecified subject and that of a dummy subject.

*3.4.2 Unspecified subject*

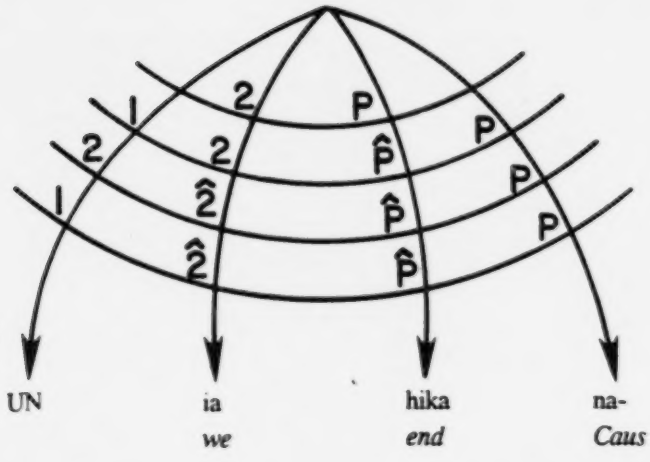
It has already been stated that clauses in Construction 3 usually have unspecified subjects. If this is chosen as the analysis of these clauses we would expect clauses with unspecified subjects to always use the morpheme *to-*. This is not the case. Some clauses with unspecified subjects occur with the absolutive subject agreement *Ø-*.

(72) Ia *Ø*-na-hika-i toi.
we 3-Caus-end-Inc.M Fut
*Someone will kill us.* OR *We will be killed.*

In example (72) an intransitive verb undergoes clause union with the causative *na-*. This should create a transitive sentence, yet person agreement is with a third person absolutive subject. The final subject cannot be *ia* 'we'. First and second person are always feminine in Madija, as mentioned in section 3.1. If this is an intransitive clause with *ia* 'we' as the subject, then the gender of the clause would have to be feminine. By the same reasoning this clause cannot be finally transitive, since *ia* 'we' as the direct object would determine gender agreement. The morpheme *ia* must be neither the subject nor the direct object. The antipassive construction, discussed in the previous section, makes the right predictions about this sentence.[3] A stratal diagram of sentence (72) shows the grammatical relations involved.

[3] Both examples of clauses with a causative morpheme have been antipassive. These clauses can also be finally transitive as shown in this example.

(73)




From example (73) we see that having an unspecified subject is not sufficient for a clause to use to- for person agreement.

The second argument against using the unspecified subject analysis is that not every clause using *to-* has an unspecified subject. This was shown in example (68). The morpheme *to-* is occurring here although the subject is specified. The unspecified analysis is not supported by the data. The morpheme *to-* does not occur on every clause with an unspecified subject and does appear on clauses that do not have unspecified subjects. The analysis left is that of a dummy subject.

*3.4.3 Dummy Subject*

A dummy is a nominal that has no inherent meaning. It is not authorized by a verb but enters at a non-initial stratum to provide a grammatical sentence. Clauses with dummies are called impersonal constructions. There is no overt word in Madija that can be called the dummy subject. If a dummy is present then it must be silent; that is, it has no phonetic realization. Perlmutter argues that silent dummies would exist in languages where pronouns are silent unless they are under emphasis or contrast (Perlmutter 1983). This is the case in Madija, as shown in section 1, example (6). Unstressed subject pronouns are dropped in Madija; therefore it is possible for Madija to have a silent dummy.

The analysis of Construction 3 as an impersonal construction has several advantages over the unspecified subject analysis. One of the problems we noted with the unspecified subject analysis is that not every sentence with an unspecified subject uses *to-*. Example (75) contains a clause that has an unspecified subject but not a dummy subject.

(75) Ia Ø-na-hika-i toi.
we 3-Caus-end-Inc.M Fut
*Someone will kill us.* OR *We will be killed.*

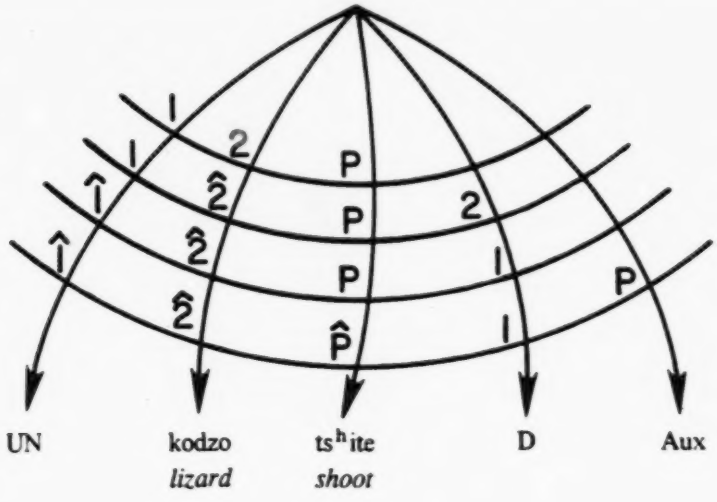
---

(74) Pok$^{h}$a amonehe i-n-ebo-hera-ni.
3.Gen woman 3-Caus-stay-Neg-Inc.F
*He did not leave his wife alone.*

From example (75) we see that unspecified subjects have no special morphology to distinguish them from other subjects. This clause could be handled the same way that a clause with a specified subject is handled. If the morpheme *to-* is analyzed as showing agreement with a dummy then it does not apply to example (75). An unspecified subject and a dummy subject are two different things.

A dummy is restricted to heading a 1 or 2 arc by the Nuclear Dummy Law (Perlmutter and Postal 1983b). I will argue that in Madija the dummy enters as a 1. If the dummy enters as a 2, the final stratum is different than if the dummy enters as a 1. If the dummy enters as a 2 with a transitive verb, it would put the existing 2 en chomage. Since the clauses we are considering have the dummy as the final subject, the dummy must advance to a 1. This puts the existing 1 en chomage as well. We are left with a finally intransitive clause where the only final term arc is the dummy. Example (71) would have this stratal diagram under the impersonal passive analysis.

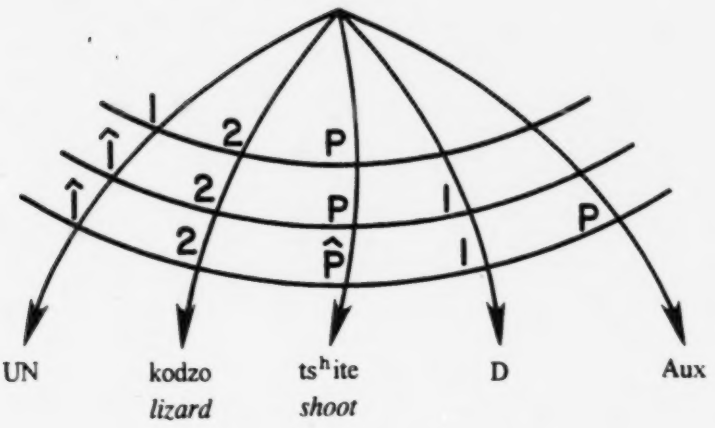
(76)




This construction is known as an impersonal passive and has been argued for in Seri (Marlett 1984), Irish, Maasai, Spanish, and Welsh (Perlmutter and Postal 1984), as well as in other languages.

When the dummy enters as a 1, the existing 1 is put en chomage. A dummy cannot retreat, so the existing 2 remains a 2 unless there is some other process going on in the clause. This produces a clause that is finally transitive.

(77)




This construction would be called an impersonal transitive. Although impersonal transitives have not been proven in the literature, there is precedent for a dummy entering as a 1. Perlmutter (1983) proves this for impersonal unergatives in Italian and Rosen (1981) for impersonal reflexives in Italian.

The impersonal passive and impersonal transitive constructions differ in two significant ways. The impersonal passive claims that the clause is finally intransitive, whereas the impersonal transitive claims that it is finally transitive. Second, each construction claims a different nominal as the brother-in-law. In (76) the brother-in-law is the initial 2, *kodzo*. In (77) the brother-in-law is the initial 1, UN. Some languages use the brother-in-law to determine agreement on the verb. This says that if the nominal that determines agreement is a dummy, then the brother-in-law of that dummy will determine the agreement. If Madija uses brother-in-law agreement, then this can be used to determine which nominal acts as the brother-in-law. That, in turn, will tell us what the dummy enters as. The verb agreement rule in Madija, given in (66) and repeated here, states

(78) *Verb agreement:* The final predicate agrees with the final subject in person and number and with the final object in number.

The final subject of Construction 3 clauses is a dummy. That means that the brother-in-law could be determining either person agreement or number agreement on the verb.

(79) a. Poa ts^hite to-na-hari.
he shoot 3-Aux-Comp.M
*Someone shot him.* OR *He was shot.*

b. Poni ts^hite to-na-haro.
she shoot 3-Aux-Comp.F
*Someone shot her.* OR *She was shot.*

c. Oa ts^hite to-na-haro.
1 shoot 3-Aux-Comp.F
*Someone shot me.* OR *I was shot.*

Although (79a) has a third person initial 2 and (79c) has a first person initial 2, both clauses have the same agreement on the verb. If we adopt the impersonal passive analysis the brother-in-law cannot be determining person agreement on the verb. With the impersonal transitive analysis there is no evidence that the brother-in-law is determining person agreement either. There is still the possibility that the brother-in-law can determine number agreement.

(80) a. Kodzo tsʰite to-na-*bakʰi*-hari.
lizard shoot 3-Aux-Pl-Comp.M
*Someone shot the lizards.* OR *Lizards were shot.*

b. Aoi tsʰite to-na-*bakʰi*-haro.
tapiers shoot 3-Aux-Pl-Comp.F
*Someone shot tapirs.* OR *Tapirs were shot.*

c. Tia-deni to-nebo-*bakʰi*-haro.
2-Pl 3-leave-Pl-Comp.F
*Someone left you.* OR *You (plural) were left.*

d. Naraa ima-siri oati to-*ki*-na-haro, amonehe.
but story-lame speak 3-Pl-Aux-Comp.F woman
*But gossip was spoken by the women.*

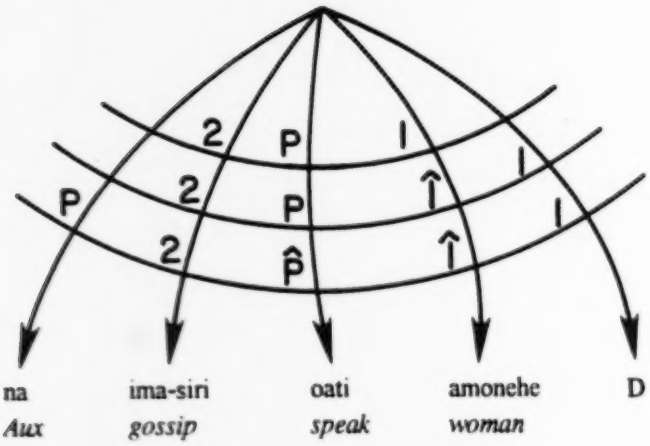
The plural agreement *-bakʰi* in (80a-c) cannot be caused by brother-in-law agreement. Even if the brother-in-law were the initial 2, as shown in example (76), it could only supply semantic information like plural or singular. The grammatical relation of subject is supplied by the dummy arc. The plural agreement of a subject arc in Madija is *ki-* or *-mana*.

In (80d) we do see an impersonal construction with the plural *ki-*. The brother-in-law in (80d) is *amonehe* 'woman', the initial 1 of the clause. This argues against the impersonal passive analysis and for the impersonal transitive analysis. The rules for Madija must state that brother-in-law agreement is used. It will also specify that *to-* is used with a dummy subject as well as for motion away with intransitive verbs.

(81) The brother-in-law option is used.
Use *to-* for third person agreement with:
a. a dummy subject
b. an intransitive clause with a semantic component 'motion away from'

There is another reason for choosing the impersonal transitive analysis over that of the impersonal passive. In section 3.3 it was shown that *-bakʰi* agrees only with a final animate 2 or 3, never with a chomeur. The clauses in (80) use *-bakʰi*, which is evidence that they are finally transitive. Only the impersonal transitive analysis claims that the clause is finally transitive. This would give the following stratal diagram for Construction 3 clauses:

(82)




It is best to consider Construction 3 as an impersonal transitive. The analysis of a dummy subject is better than that of an unspecified subject, because it covers all known grammatical sentences without making wrong predictions. The construction must be considered an impersonal transitive instead of an impersonal passive, because there is evidence that the clause is finally transitive and that the brother-in-law is the initial 1.

*3.5 Summary*

I have argued for three constructions using transitive verbs: the ergative construction, the antipassive, and the impersonal transitive. Through the discussion of unergative, unaccusative, and transitive verbs, the following rules have been developed or supported.

(83) *Verb agreement:* The final predicate agrees with the final subject in person and number and with the final animate object in number.
The brother-in-law option is used.

*Number agreement:*
Use *ta-* for plural, distributive 2;
Use *-bakʰi* for plural objects.
Only one morpheme showing number agreement with an object can occur in a clause.

*Person agreement:*
third person
Use *to-* for
a. a dummy subject;
b. an intransitive clause with a semantic component 'motion away from';
Use *i-* for ergative subject;
Use *Ø-* for absolutive subject.

*Gender agreement:* Gender agreement in the clause is determined by the final absolutive.

*Auxiliary Rule:* Use the auxiliary verb when there is an initial 1.

*Causative na-:* The causative *na-* can be used only when there is no 1 in the preunion stratum.

**4. Adjectival predicates**

This last group of predicates fits the prototype of adjective.

(84)

| | |
|---|---|
| akats$^{h}$e | *pleasant* |
| ak$^{h}$ara | *full* |
| ak$^{h}$o | *stingy* |
| badzira | *small* |
| bika | *good* |
| bida | *bitter* |
| dzibei | *colorful* |
| hits$^{h}$i | *stiff* |
| hots$^{h}$a | *foul* |
| koma | *painful* |
| k$^{h}$ara | *hard* |
| mak$^{h}$o | *red* |
| mahona | *sweet* |
| napo | *white* |
| oats$^{h}$ira | *slow* |
| pama | *few* |
| soe | *dark* |
| tabak$^{h}$ora | *bad* |
| tere | *short* |

Although these adjectives function like the predicate of the clause, they behave differently from the verbal predicates examined earlier. This class of predicates can occur both with and without the auxiliary verb. When they occur with the auxiliary verb they carry a stative meaning. Without the auxiliary verb a change of state is involved. Stative clauses are shown in (85a-d); change of state clauses are in (85e-h).

(85) a. O-bika-haro.
1-good-Comp.F
*I got better.*

b. Ti-bika-haro.
2-good-Comp.F
*You got better.*

c. To-bika-haro.
3-good-Comp.F
*She got better.*

d. To-bika-hari.
3-good-Comp.M
*He got better.*

e. Bika o-na-haro.
good 1-Aux-Comp.F
*I was good.*

f. Bika ti-na-haro.
good 2-Aux-Comp.F
*You were good.*

g. Bika t-a-haro.
good 3-Aux-Comp.F
*She was good.*

h. Bika t-a-hari.
good 3-Aux-Comp.M
*He was good.*

*4.1 Copulative auxiliary verb*

The major problem with this group of verbs is their use of the auxiliary verb. Rosen (1984) has shown that adjective-like verbs are unaccusatives; they have an initial 2 but no initial 1. The Auxiliary Rule, stated last in (83), excludes these verbs from using the auxiliary verb.

(86) *Auxiliary Rule:* Use the auxiliary verb when there is an initial 1.

Either the auxiliary rule must be weakened in some way, or the auxiliary occurring after the adjectival predicate is a different morpheme from that described in (86). There is actually some evidence that the two auxiliaries are not the same. When the third person agreement prefix *to-* is used with the auxiliary following a transitive verb, both the agreement prefix and the auxiliary verb retain their form: *to-na*. When this prefix is added to the auxiliary verb following an adjectival verb, they contract to *t-a*. Another possibility is that this is evidence for *to-* being two different morphemes.

(87) a. Poa tsʰite *to-na*-hari.
he shoot 3-Aux-Comp.M
*Someone shot him* OR *He was shot.*

b. Poni tsʰite *to-na*-haro.
she shoot 3-Aux-Comp.F
*Someone shot her* OR *She was shot.*

c. Bika *t-a*-haro.
good 3-Aux-Comp.F
*She was good.*

d. Bika *t-a*-hari.
good 3-Aux-Comp.M
*He was good.*

A second difference between the two auxiliaries is in their negative forms. The auxiliary that follows unergative and transitive verbs takes the morpheme *-hara/-heri,* while the auxiliary following an adjectival predicate takes no negative morpheme. Instead, the adjectival predicate receives the suffix *-ra*.

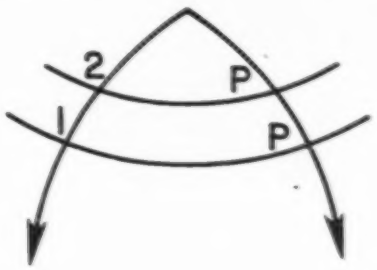
(88) a. Ohi ti-ki-na-*heri*-hi!
cry 2-Pl-Aux-Neg.F-Imp
*(You plural) Don't cry!*

b. Oa pa dotsʰe o-na-maro-*hara*.
I * send 1-Aux-up-Neg.M
*I didn't send him up.*

c. Mihi-*ra* o-na-ni.
able-Neg 1-Aux-Inc.F
*I'm not able.*

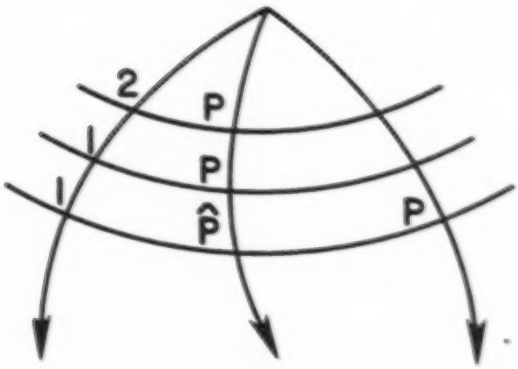
These differences give evidence that the auxiliary that follows an adjectival predicate could be a different morpheme from the one described in the Auxiliary Rule. To avoid confusing the two morphemes, the second auxiliary will be glossed 'Cop', for 'copulative'. The copulative auxiliary introduces the idea of stative to the clause. There are two stratal diagrams possible for adjectival predicates, depending on whether or not they use the copulative auxiliary.

(89) a.




*You got better.*

b.




*You were good.*

The only other problem with this class of verbs is that of third person agreement. As can be seen from example (87), they use the morpheme *to-* for third person agreement. This fact was mentioned, but not discussed, in section 3.4 when impersonal transitives were analyzed. Both singular and plural adjectival predicates use *to-* if the copulative auxiliary is not used. However, if the copulative auxiliary is used, the morpheme *to-* occurs only with singular adjectival predicates, as shown in (90). When *to-* and the auxiliary verb come together they contract to *ta* (Adams and Marlett ms.).

(90) a. `To-bika-haro.`
`3-good-Comp.F`
*She got better.*

b. To-bika-mana-haro.
3-good-Pl-Comp.F
*They got better.*

c. Bika t-a-haro.
good 2-Cop-Comp.F
*She was good.*

d. Bika-k$^{h}$iri na-haro.
good-Pl Cop-Comp.F
*They were good.*

By adding the information shown in (90), a full rule for person agreement can be written. The agreement for first and second person is pulled from section 1. These rules are disjunctively ordered.

(91) *Person agreement:*

*First person*
Use *o-* for singular subject
Use *i-* for plural subject

*Second person*
Use *ti-*

*Third person*
Use *to-* for
a. dummy subject
b. intransitive clause with semantic component of 'motion away from'
c. adjectival predicates without the copulative auxiliary
d. singular adjectival predicates with the copulative auxiliary
Use *i-* for ergative subject
Use *Ø-* for absolutive subject

*4.2 Plural subject agreement*

The only problem left to be addressed in this article is that of plural subject agreement. This was left until last because each class of verbs or construction does something different, and all must be considered in order to form a hypothesis. Adjectival predicates act differently based on the presence or absence of the copulative auxiliary.

(92) a. Ti-bika-*mana*-haro.
2-good-Pl-Comp.F
*You (plural) got better.*

b. To-bika-*mana*-haro.
3-good-Pl-Comp.F
*They got better.*

c. Bika-*k$^{h}$iri* ti-*ki*-na-haro.
good-Pl 2-Pl-STAT-Comp.F
*You (plural) are good.*

d. Bika-*k$^{h}$iri* na-haro.
good-Pl STAT-Comp.F
*They are good.*

The morpheme *-kʰiri* is used only on this class of verbs and only when the copulative auxiliary is present. The morphemes *ki-* and *-mana* are both used on other classes of verbs. Examples of these will be pulled from their respective sections in this article for comparison.

(93) *Unaccusative*

a. Ti-tsʰona-*mana*-haro.
2-fall-Pl-Comp.F
*You (plural) fell.*

b. Ø-oada-*mana*-haro.
3-sleep-Pl-Comp.F
*They slept.*

*Unergative*

c. Ohi ti-*ki*-na-haro.
cry 2-Pl-Aux-Comp.F
*You (plural) cried.*

d. Bakʰo Ø-*ki*-na-hari.
arrive 3-Pl-Aux-Comp.M
*They arrived.*

*Transitive/ergative*

e. Kodzo tsʰite ti-*ki*-na-hari.
lizard shoot 2-Pl-Aux-Comp.M
*You (plural) shot the lizard.*

f. Kodzo tsʰite i-na-*mana*-hari.
lizard shoot 3-Aux-Pl-Comp.M
*They shot the lizard.*

*Transitive/antipassive*

g. Kodzo tsʰite ti-*ki*-na-haro.
lizard shoot 2-Pl-Aux-Comp.F
*You (plural) shot the lizard.*

h. Kodzo tsʰite Ø-*ki*-na-hari
lizard shoot 3-Pl-Aux-Comp.M
*They shot the lizard.*

*Transitive/impersonal transitive (rare)*

i. Naraa ima-siri oati to-*ki*-na-haro, amonehe
but story-lame speak 3-Pl-Aux-Comp.F woman
*But gossip was spoken by the women.*

These facts are placed in chart form below for easier reference.

(94)

| | ki- | -mana | -kʰiri |
|---|---|---|---|
| unergative | X | | |
| transitive | | | |
| ergative/2P | X | | |
| /3P | | X | |
| antipassive | X | | |
| imp. trans. | X | | |
| adjectival | | | |
| copula/2P | X | | X |
| /3P | | | X |
| no copula | | X | |
| unaccusative | | X | |

When we remember that the stratal diagram of adjectival predicates without the copulative auxiliary is identical to that of an unaccusative verb, it is reasonable that they would both use *-mana*. Other constructions use *ki-*, with the exception of third person ergative and third person adjectival predicates with the copulative auxiliary. The adjectival predicates with the copulative auxiliary use *-kʰiri* for both second and third person. From this chart it is tempting to say that the class of verb determines which plural morpheme is used and to list the exceptions. However, there are a few other facts that must be considered before a hypothesis is reached. A small class of transitive verbs that do not take the auxiliary verb were mentioned in section 2. These verbs never take *ki-* but always use *-mana*.

(95) Ti-di-*mana* nahi bado, tia naki.
2-pick.up-Pl there deer you also.
*You harvest deer, you also.*

This suggests that the important factor is not the class of verb or construction used but the presence of the auxiliary verb. Since the discussion from now on depends on the grammatical relations of each construction, they are given here. In order to fit them into one chart, stratal diagrams are not used. Simply the grammatical relations of each stratum are listed. The symbol $P_{Aux}$ stands for the auxiliary verb while $P_{Cop}$ stands for the copulative auxiliary verb.

(96)

| | | | |
|---|---|---|---|
| a. | unaccusative<br>2 P<br>1 P<br><br><br>adjectival<br>no cop. aux<br>2 P<br>1 P<br>ergative<br>no aux.<br>1 2 P | b. | antipassive<br>1 2 P<br>2 $\hat{2}$ P<br>1 $\hat{2}$ P<br>1 $\hat{2}$ $\hat{P}$ $P_{Aux}$<br>unergative<br><br>1 P<br>1 $\hat{P}$ $P_{Aux}$<br>impersonal<br>transitive<br>1 2 P<br>$\hat{1}$ 2 P 1<br>$\hat{1}$ 2 $\hat{P}$ 1 $P_{Aux}$ |
| c. | ergative<br><br><br>1 2 P<br>1 2 $\hat{P}$ $P_{Aux}$ | d. | adjectival<br>with cop.<br>aux.<br>2 P<br>1 $\hat{P}$ $P_{Cop}$ |

The clauses in group (a) always use *-mana*. Those in group (b) always use *ki-*. Group (c) uses *-mana* for third person and *ki-* for second person. Group (d) always uses *-k$^h$iri* and uses *ki-* as well for second person. Steve Marlett (personal communication) has suggested that second and third person be treated separately. The rule for third person should group unaccusatives and ergative clauses together since they all take *-mana*. He suggests that the relevant factor is the presence of an initial 2 which is a final term. An unaccusative meets this by having an initial 2 which becomes a final 1. An ergative clause has an initial 2 which is the final 2. Unergatives have no initial 2, and antipassives have an initial 2 that is not a final term but a chomeur. This works for every construction but the impersonal transitive, where plural subject agreement is rare. This gives the following chart for plural subject agreement.

(97)

| | ki- | -mana | -k$^h$iri |
|---|---|---|---|
| 2P | any auxiliary | elsewhere | adj. P chomeur |
| 3P | elsewhere | initial 2 that<br>is a final term | adj. P chomeur |

There is one more fact that must be considered before a final rule for plural subject agreement is formed. Whenever a clause has a directional affix, the plural subject agreement is *-mana*, even if it is an unergative or antipassive clause.

(98) a. Khobo Ø-na-ridza-*mana*-hari.
crawl 3-Aux-around-Pl-Comp.M
*They crawl around.*
b. Dzoho dzoho dzoho Ø-na-ridza-*mana*-ni.
carry carry carry 3-Aux-around-Pl-Inc.F
*They (feminine) carry them (masculine) around.*

The idea of clause union that was discussed in section 2 is useful here. We have already stated that the auxiliary seems to be necessary for the use of *ki-*. What we have not stated is whether the auxiliary must be the final P. If directionals in Madija are predicates which participate in clause union, then the auxiliary verb *na* would be a P chomeur. By specifying that the *na* auxiliary must be a final P in order to receive the morpheme *ki-* the sentences in (98) are explained. This revision must be used for both second and third person. The idea of an initial 2 which is a final term can no longer be used for third person number agreement. An unergative does not have an initial 2 that is a final term, yet it uses *-mana* when a directional is present. Clauses with third person subjects are different from those with second person subjects in that there are two things needed to select the morpheme *ki-*. They must have an auxiliary which is a final P, AND they can have only one initial nuclear term which is a final term. Only antipassive, unergative, and impersonal transitives meet both of these criteria. A new chart showing plural subject agreement states this hypothesis:

(99)

| | ki- | -mana | -k$^{h}$iri |
|---|---|---|---|
| 2P | any final P auxiliary | elsewhere | adjective P chomeur |
| 3P | any final P auxiliary AND only one initial term that is a final term | elsewhere | adjective P chomeur |

This needs to be put in the form of a rule.

(100) *Number agreement*:
Plural second or third person subject
Use *ki-* with any final P auxiliary verb; with a third person subject there must also be only one initial nuclear term arc which is a final term
Use *-k$^{h}$iri* with adjective P chomeur
Use *-mana* elsewhere

The way that the rule in (100) is stated *-mana* will never occur with any of the other plural subject agreement morphemes. Whenever the copulative auxiliary is used, the adjectival predicate is a P chomeur and receives *-k$^{h}$iri*. Because the copulative auxiliary is an auxiliary which is a final P, it is eligible to receive *ki-* as well. In clauses with a second person subject, we see both of these morphemes occurring in the same clause. Clauses with third person subjects are blocked from using both morphemes by the second stipulation, which states they may have only one initial nuclear term which is a final term.

**5. Conclusion**

This article set out to explore the class of predicates in Madija. There were four major problem areas related to these predicates. These areas were the distribution of the auxiliary verb, the

selection of the morpheme for plural subject agreement, the determination of gender, and the question of why three distinct morphemes are used for third person agreement. In section 2 intransitive verbs were divided into two subclasses, unergative and unaccusative. The two classes can be distinguished from each other by three tests. An unergative verb always occurs with the auxiliary verb, never occurs with the causative *na-*, and uses *ki-* for agreement with a plural subject. An unaccusative verb never occurs with the auxiliary verb, does occur with the causative *na-*, and uses *-mana* for agreement with a plural subject. This section allowed a rule to be written about the distribution of the auxiliary verb: it occurs when there is an initial 1. It also provided a rule for the causative *na-*: it can occur only when there is no 1 in the preunion stratum.

Section 3 covered transitive verbs and the three constructions in which they occur. Clauses in the first construction were called ergative clauses. These clauses are finally transitive, as shown by the direct object determining number and gender agreement and the use of a special morpheme to indicate third person. This morpheme was analyzed as agreeing with a third person ergative subject. The second construction was analyzed as being an antipassive. Although these clauses use the same verbs as ergative clauses they are finally intransitive. This is shown by the lack of number agreement with the initial direct object, gender agreement with the subject, and the use of the same morpheme for third person agreement as other intransitive clauses. The third construction was analyzed as being an impersonal transitive. It was considered an impersonal construction because of the third person agreement *to-* on the verb. It is a finally transitive clause as shown by agreement in number and gender with a direct object. In this section a rule for person agreement was formed and the rule for gender that was proposed by Adams and Marlett (1987) was defended.

Section 4 looked at adjectival predicates. The auxiliary verb that occurs with this class of predicates was analyzed as being different from the auxiliary verb seen in other sections. The problem of which morpheme is selected for plural subject agreement was also handled in this section. For a complete list of the rules developed and used in this article, see the Appendix.

**Appendix: Summary of Rules**

Verb agreement:
- The final predicate agrees with the final subject in person and number and with the final animate object in number.
- The brother-in-law option is used.

Number agreement:
- Plural second or third person subject
- Use *ki-* with any final P auxiliary verb.
  - With a third person subject there must also be only one initial nuclear term arc which is a final term.
- Use *-k$^h$iri* with adjective P chomeur.
- Use *-mana* elsewhere.

Object agreement:
- Use *ta-* for plural, distributive 2.
- Use *-bak$^h$i* for plural animate objects.
- Only one morpheme showing number agreement with an object can occur in a clause.

Person agreement: (disjunctive ordering)
- First person
  - Use *o-* for singular subject.
  - Use *i-* for plural subject.

Second person
Use *ti-* for any subject.
Third person
Use *to-* for:
a. a dummy subject,
b. an intransitive clause with a semantic component 'motion away from',
c. adjectival predicates without the copulative auxiliary,
d. singular adjectival predicates with the copulative auxiliary.
Use *i-* for ergative subject.
Use *Ø-* for absolutive subject.

Gender agreement:
Gender agreement in the clause is determined by the final absolutive.

Auxiliary Rule:
Use the auxiliary verb when there is an initial 1.

Causative *na-*: The causative *na-* can be used only when there is no 1 in the preunion stratum.

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